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THE MEDICAL HISTORY OF CHRISTOPHER COLUMBUS,

AND THE PART TAKEN BY THE MEDICAL PROFESSION IN THE DISCOVERY OF AMERICA.

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"*Amicus Plato, sed magis amica veritas.*"—ARISTOTLE.

One of the most important events in the history of humanity, and perhaps second only to the birth of Christ in beneficial results, is without any species of doubt the discovery of America by the Spaniards under the leadership of Christopher Columbus. A number of times willing and unwilling visitors certainly did come before that date from the Old World to the New. In the fifth century of the Christian era, a few Buddhist missionary priests came, either directly from China to a country which they called Fusang, and known to us now as Mexico, or they first, and most probably, settled in Japan and afterwards crossed from there to the Pacific coast of America; the voyages of the Northmen in the tenth and eleventh centuries, the traditional narratives of which tell us of the deeds of the daring sailor, Eric the Red, and the discovery of Helluland, Markland, and Vinland by his famous son, Leif Ericsson; the story of the Venetian brothers, Nicolo and Antonio Zeno, the first wrecked in 1390 upon one of the Faroe Islands, his subsequent visit to Greenland and return, and the second embarking on an unsuccessful voyage of discovery in the Atlantic Ocean, about the year 1400, to verify some fishermen's reports of the existence of land a thousand miles or more to the west from the Faroe Islands; the old and often repeated rumors concerning the fancied Island of St. Brandan, which several Portuguese and Spanish captains imagined they had beheld beyond Madeira; the seemingly-truthful statement in regard to the Spanish pilot, Alonzo Sanchez de Huelva, who, sailing in 1484 (which should be 1474) "one year more or less," from the Canaries to Madeira, had been tempest-tossed by violent easterly winds upon an unknown island (the Island of Hispaniola or San Domingo), where he landed, took an altitude, and wrote an account of all he saw, and all that had occurred in the voyage; he succeeded in returning, arrived at Terceira (one of the Azores) sick and worn out, and soon after died, leaving Columbus, who had hospitably received him in his house and nursed him, heir to his papers.

All these, and more, pre-Columbian voyages, legendary reports and fanciful descriptions of America are completely divested of true historical importance, and did not contribute a mite to our geographical knowledge or to the betterment of mankind. To speak of them as to implicate, in any sense whatsoever, that they constitute a *discovery* of America is perfectly absurd. To expatiate about them with the mental reservation of robbing Columbus of his well-earned title of discoverer of the New World is the height of folly. In 1492 the American continent was to a certain degree as unknown to the rest of the world as the nebulous inhabitants of the planet Mars are to us to-day.

On the present four hundredth anniversary of that paramount event in history, almost all classes and conditions of men have endeavored to bring forth their representatives who, in some way or another, had anything to do with it. Mariners are still singing the wonderful skill and intrepidity of their seafaring companions of the fifteenth and sixteenth centuries. The military have spoken of their famous captains, and with minute details referred to their heroic feats and glorious conquests, not always wise or even right. The clergy have told us of the first American bishops, large numbers of pious and lion-hearted missionaries, and the numberless martyrs sacrificed in our luxuriant forests. Politicians have pointed out the many examples of good, indifferent, bad, and very bad rulers, together with chieftains and leaders totally destitute of diplomatic tact. Lawyers have shown who were at that time eminent legislators, and put on record the notable judicial contests arising in consequence of the discovery of America. Physicians only have remained silent in this universal revival, when we, as a class, contributed very largely to the realization of the constant dream of a great genius, thought then by almost every one but a distinguished Italian physician and a modest Spanish village doctor to be merely a madman.

If modern anthropological science can justly boast of having made clear the intimate relations existing between the shape, volume, and minute structure of the internal organs of man and his outward manifestations, both physical and psychical, it is evident that in speaking of such a profoundly important historical figure as Christopher Columbus, an humble attempt to examine his personal appearance, temperament, physical ailments, and the cause of his untimely death may greatly help a more accurate appreciation of his mental characteristics and moral nature.

First, as to the date of his birth. This is a *vexata questio* which it would be out of my power in the limits of this short paper to discuss. Washington Irving, relying upon the evidence of Andrés Bernaldez,

an historiographer and intimate friend of Columbus, states it to be about 1435 or 1436. Don Fernando, the Admiral's second son and his most faithful biographer, relates that in a letter written by his father to the King and Queen of Spain, dated 1501, he declares that he had then been forty years at sea, and in another letter that he was fourteen years old when he first went to sea; so that allowing a year either way for probable inattention to circumstantial details, we get the date of his birth, fixed by his own hand, at about 1447. If we take into consideration that he did not go to sea during his seven years of patient waiting in Spain,—from 1485 when for the second time he entered that country from Portugal, to 1492 when he set sail westward on the Sea of Darkness—we must then acknowledge that in referring in 1501 to his being forty years at sea, he did not probably reckon the time spent in surmounting the difficulties encountered at the court of Ferdinand and Isabella. This would bring us to 1440 as the date of his birth; but if we make a calm and philosophical analysis of the expression, "being forty years at sea," from a sailor who had the year before arrived, a prisoner in fetters, poor, sickly and dejected, from his third voyage across an unknown ocean, and bearing in mind his former unequivocal statement that he had "followed the sea for twenty-three years without being on shore any space of time worth accounting," in which period he had been to and fro upon the Mediterranean, the Grecian Archipelago, France, Flanders, the coast of Guinea, the Canary Islands, Madeira, Porto Santo, the Azores, Cape Verde Islands, England, Ireland, Iceland, and sailed a hundred leagues beyond this "Ultima Thule" of Ptolemy, we will be forced to admit that that phrase only means *a sailor of forty years' experience*, the same as any old professor, architect, lawyer, or physician might express himself in like circumstances regardless of the few years spent in traveling, sickness, or some temporary occupation.

The place of his birth was the city of Genoa.

From the accounts of his personal appearance given by his son Fernando, Las Casas, Andrés Bernaldez, Pietro Martire d'Anghiera, the Portuguese historian João de Barros, Agostino Giustiniani, Antonio Gallo and others who knew him well, I gather that Columbus was a man of commanding presence, tall and well built, with fair ruddy complexion somewhat freckled, oval face with rather prominent cheek bones, broad and high forehead, medium-size mouth, aquiline nose, grayish-blue eyes, very light reddish hair and beard prematurely turned gray. He was of a genial disposition, courteous and graceful, his conversation agreeable and interesting to such a point that strangers were quickly attracted and felt at ease. An indefinable air of dignified command surrounded him, and the magnetism of his noble soul was perceptible in the tender glance of his glowing eyes, when his religious enthusiasm was kindled by the divine spark of genius that abided in him. Of a great nervous susceptibility, his mind was highly imaginative and poetical. Naturally religious, he was temperate in eating and drinking and puritanical in his habits.

My search for particulars regarding the life of Columbus prior to his arrival in Portugal is far from satisfactory. From the period of his first going to sea, which was about 1460, until the year some biographers say his vessel was burned near the Portuguese coast not far from the city of Lisbon, nowhere in history have I met with a distinct mention of his name. We have positive evidence, however, that in 1472 he was in the city of Savona, Italy, from the fact of his signature being appended as witness to the will of one Nicolo Monleone, under date of March 20 of that year. It appears very probable that in 1469 he took part, under the command of a French vice-admiral of the name of Caseneuve, in a successful sea fight to capture several Dutch ships returning from the herring fishery in the Baltic. We find him afterward in a terrible naval engagement between Lisbon and Cape St. Vincent, trying to take possession of four richly laden Venetian galleys on their return from Flanders, the desperate struggle lasting from morning till evening, the hand grenades and other burning missiles used in the battle caused at last a general conflagration among the vessels, which having been lashed together with iron grapplings, could not be separated, and the crews were compelled to leap into the water to escape the fire. Columbus' son, Fernando, goes on to say that "his father, who was a good swimmer, finding himself at the distance of two leagues from land, seized an oar, and by its aid succeeded in reaching the shore." It was close at hand to Lisbon, where he went and there made his abode. This happened in the year 1470 or early in 1471, and in 1473 he married the Portuguese lady, Philippa Moniz de Perestrelo, and went to live with her at Porto Santo, a small island on the Atlantic Ocean, twenty-five miles northeast of Madeira. There his son Diego was born in 1474.

The subject of the medical history of Columbus is a barren one, so barren indeed that it has never before been touched upon. I asked the present Duke of Veragua, and such living sterling biographers of the illustrious Genoese navigator as Mr. Henry Harrisse, Mr. José M. Asensio y Toledo, Professors John Fiske and C. K. Adams, Mr. Justin Winsor and Mr. Cesareo Fernandez Duro, and they all answered me that they did not know of anybody who had investigated the medical aspect of the life of Columbus. I consulted the librarians of the Smithsonian Institution at Washington, Lenox and Astor Libraries of New York and the Public Library of the City of Boston; I searched carefully all the old standard historical authorities, but mighty little did I find, and here it is embodied. I must, however, acknowledge my indebtedness to a recent monograph of Dr. Calatraveno, of Madrid, Spain, for many things I say in this paper about the part taken by the medical profession in the discovery of America. Nearly a year of constant inquiry and exploration in this unproductive field has resulted in what I venture to call my contribution to this first Columbian Pan-American assemblage of scientific men.

The piratical character of the seafaring life of Columbus' time, and the peculiar construction of the vessels, necessarily exposed its followers to unceasing hardships, privation and many unavoidable dangers to health. The severity of this early manner of living in a man of such a well-marked sanguine temperament as that of the immortal sailor must have very insidiously tended to undermine his naturally strong constitution, after "being at sea twenty-three years without remaining on shore any space of time worth accounting," and render him liable, at the age of 46 years, to the ailments and sicknesses he

subsequently suffered during his four voyages of discovery to America; to which must be added the grief, disappointment, mental anxiety and moral depression he endured, altogether combining in the production of the chronic disease that put an end to his imperishable career at a comparatively premature period of life.

Regarding hereditary predisposition to disease, I may safely say he had none. His father died at an extreme old age (in 1496 or 1498) and his mother a few years before. He was the eldest of five children, four boys and a girl, and not one of the others showed hereditary taint. His parents belonged to the healthy, sound, hearty and frugal types of the Ligurian peasantry.

On Friday, August 3, 1492, Columbus sailed westward from the little seaport of Palos de Moguer, Spain, to plough the Sea of Darkness in quest of a New World. On Friday, October 12 of the same year, he discovered America, and also on Friday, March 15, 1493, he dropped anchor, back from his mission, at the same little harbor of Palos. He spent 225 days in this first round trip to the Western hemisphere, in which time I have found no record whatever of his having suffered any sickness, except casual references to "sore eyes." This slight and transitory ocular affection which he often experienced afterwards, I consider to have been probably due to blepharitis, or styes, or to granular ophthalmia, brought on by straining the eyes in search of land in a diaphanous atmosphere where the sun's rays of light are most intense. Perhaps the Admiral's leaning toward albinoism also contributed to it. His excellent eyesight at night seems to lend weight to this opinion of mine.

He undoubtedly suffered great anxiety, tribulation and mental anguish when the crews began to murmur, and finally became openly impatient and mutinous at not finding land; but this prejudicial moral effect on his health must have been entirely extinguished by the joy, satisfaction and pride of having succeeded in his stupendous enterprise. The two shabby tricks of Martin Alonzo Pinzon, captain of the caravel *Pinta*—by far the best sailer of the three—when on the 20th of November, sailing along the coast of beautiful Cuba, he treacherously deserted his chief, and on the 12th of February he surreptitiously abandoned him again to bring the news of the discovery home first, must have also caused Columbus no little pain and dejection.

He put to sea again, on his second voyage of discovery, from Cadiz, Sept. 25, 1493; this time with a fleet of three galleons or carracks and fourteen caravels, carrying 1,500 people on board, instead of the 120 who accompanied him in his former unparalleled hazardous cruise.

This large number of men—among whom were many aristocratic young fellows, daring, supercilious, irascible and obstinate hidalgos, left without occupation at the end of the war with the Moors—were placed under the medical care of Dr. Diego Alvarez Chanca, a distinguished practitioner of great reputation of the city of Seville, who was also Physician-in-Ordinary to the King and Queen of Spain, and had attended their firstborn, Princess Isabella (who afterwards became Queen of Portugal), during her serious illness the year before. Speaking of him in a memorial addressed to Ferdinand and Isabella, dated Jan. 30, 1494, Columbus wrote: "You will inform their Highnesses of the continual labor that Dr. Chanca has undergone, from the prodigious number of sick and the scarcity of provisions; and that, in spite of all this, he exhibits the greatest zeal and benevolence in everything that relates to his profession. As their Highnesses have intrusted me with the charge of fixing the salary that is to be paid to him while out here (although it is certain that he neither receives, nor can receive anything from any one, and does not receive anything from his position equal to what he did receive and could still get if he were in Spain, where he lived peaceably and at ease, in a very different style from what he does here), I have, nevertheless, not ventured to place to the credit of his account more than fifty thousand maravedis (about $725) per annum, as the sum which he is to receive for yearly labor during the time of his stay in this country."

The letter or report of this learned and magnanimous man to the Chapter of Seville, from which I quote two passages further on, is the first scientific monograph written about America, and worthy of careful perusal.

On the 27th of November the fleet arrived in the harbor of La Navidad, in the Island of San Domingo, and found the little fortress completely destroyed, and each and every one of the thirty-eight men left there on the first voyage had been massacred by the native Indians. Columbus caused to be built a neat little town, to which the name of Isabella was given, and remained in this island until April 24, 1494, when he put to sea again and discovered Jamaica (May 3), and visited Cuba for the third time; returning from there he passed by all the southern coast of Jamaica and Hispaniola, and discovered the little islands of Beata, Saona and Mona.

The day after leaving this last island, in the passage between San Domingo and Porto Rico (Sept. 25, 1494), worn out with the toil and hardships of a five months' cruise among people who, though very kind and generous, could not afford him the relief and comfort he so much needed, and in which time his incessant watching, nervous excitement and high hopes of finding large quantities of gold and spices had sustained him wonderfully, the inevitable reaction at last overtook him, and his whole system suddenly collapsed. "He lay in a stupor, knowing little, remembering nothing, his eyes dim and vitality oozing, until the little fleet sorrowfully, but gladly entered the harbor of Isabella." Columbus himself acknowledges that for thirty-three days he had slept next to nothing, when he began to feel very tired and fell into a lethargical state which almost deprived him of his life. He remained sick very nearly five months, under the care of Dr. Chanca.

In the early part of April of that year he had been seized with intermittent fever at Isabella, where the same principles of heat, humidity, porosity of the soil, and presence of decaying vegetable matter which gave an extraordinary fecundity to the uncultivated fields, worked havoc among the Spaniards. Many of them are also said to have suffered at La Vega under the torments of a disease called "the scourge" (syphilis?), the origin of which, whether American or European or Asiatic, has been a subject of great dispute for over three centuries. Dr. Chanca, in his letter to the Chapter of Seville, expresses himself on the situation thus: "One-third of our people have fallen sick within the last four or five days, which I think

has principally arisen from the toil and privations of the journey, and another cause has been the variableness of the climate." In another place he says: "The Admiral had at one time determined to leave the search for the mines until he had first dispatched the ships which were to return to Spain on account of the great sickness which had prevailed among the men." Does he refer here to venereal diseases? I incline to the affirmative, but in the sense of gonorrheal and not syphilitic diseases. Concerning his first statement that one-third of the colonists had fallen sick in four or five days, I firmly believe it was due to the bad quality of the provisions brought from Spain, and to malarial infection, not very well understood in those days. The miraculous *pulvis febrifugus orbis americani* was not yet known to Europeans. The existence and wonderful virtue of "quinquina,"—which later on saved the life of Charles II, of England, Louis XIV, of France, and Friedrich the Great—were then only known to the native inhabitants of undiscovered Peru.

What was that dangerous disease from which Columbus did not entirely recover for nearly five months? Was it a disease of the nervous system? The only affections of that kind most likely to have developed are acute softening of the brain or idiopathic meningitis. But acute softening occurs always in very old persons, is apt to be preceded by mental confusion, a feeling of numbness, and some slight impairment of motion; and in idiopathic meningitis there are from the beginning an intense headache, vertigo, nausea and vomiting. These two diseases also run their courses generally in a short time, the usual termination in acute meningitis being death; cerebral softening always leaves behind permanent disorder of the mental, sensory or motor functions.

Could it have been scurvy? Decidedly no, because although scorbutus was in those days a very familiar disease among soldiers and sailors, arising from a deficiency of fresh meat or vegetable diet: and sometimes to be found also in badly ventilated, dark, and damp prisons, owing to the want of proper assimilation of food, neither insomnia, stupor, nor delirium form a part of the onset of this disease. Besides, scurvy is so slow and gradual in its development that the patients do not know when it begins.

In the absence of a clinical history of the case, let us scrutinize a little more the simple historical account of the disease. In going from Mona to Porto Rico, Columbus' fatigue and weakness and want of proper food "cast him into a dangerous disease between a pestilential fever and lethargy, which deprived him of his sense and memory." This is his own way of expressing his malady. It certainly was then one of the following three low-type fevers—typhus, typhoid, or relapsing.

We must not lose sight of the fact that he had just got over a protracted attack of paludal poisoning, which consequently left him in an anemic and debilitated condition at the time of embarking in this five months' cruise; thus offering an inviting soil for the favorable incubation of a specific, blood-disorganizing fever such as the above named ones.

Not knowing the exact bodily temperature, nor the characteristics of its daily variations (and for the best of reasons,—the clinical thermometer had not yet been invented), nothing whatever in regard to the peculiarities of the pulse, the actual condition of the skin, the tongue, the bowels, the presence or absence of eruption, epistaxis, lung symptoms, nausea or vomiting, the anomalies of the urinary excretion, etc., we can not make a good differential diagnosis between those three low, specific fevers. As a rule, we find in all of them the same symptoms of general malaise, weakness, drowsiness, at the beginning of the disease; but my opinion is, however, that it was typhus because of the prolonged convalescence, which must have been due to some pulmonary complication, partial paralysis, scurvy, dysentery, suppurative inflammation of parotid, submaxillary or inguinal glands, or more probably of the joints. There is another important circumstance which leads me to make the diagnosis of ship fever, and that is that Columbus, as a general rule, very seldom went ashore but remained on board while waiting at the different harbors, coves, anchorages, and roadsteads, thus necessarily exposing himself more to the infection than the average of his companions, whose nervous systems could not have been in such an unstrung and depressed state as his.

When Columbus recovered consciousness at Isabella, he found his dear brother Bartholomew, whom he had not seen for six years, seated by his bedside and tenderly nursing him. This happened on the 8th or 9th of October, which shows that the stupor lasted during the first two weeks of the disease—another diagnostic symptom in favor of typhus.

Early in March, 1496, the immortal navigator sailed for Spain; but he did not arrive there until June 11, having exhausted all their provisions and the famine was such that the crews came near eating up some of the thirty or more Indian captives whom they were taking to Spain. The haggard and starving party dropped anchor in the same harbor of Cadiz, from which many of them had joyously set sail with Columbus two years, eight months, and sixteen days previously.

Columbus started on his third voyage of discovery with a fleet of six ships, carrying about 200 men besides the sailors, from the little sea-port of San Lucar de Barrameda on May 30, 1498. On June 21, at the island of Ferro (the most westerly of the Canaries) the Admiral divided his fleet, sending three ships directly to Hispaniola, while with the other three he steered southwest. Prosecuting his voyage toward the Cape Verde Islands, in the last days of June, and "as he advanced within the tropics, the change of climate, and the close and sultry weather, brought on a severe attack of the gout, followed by a violent fever," says Washington Irving. On the 31st of July he discovered the Island of Trinidad, and caught a glimpse of terra firma at the delta of the Orinoco River; coming out from it through the passage which he named Dragon's Mouth (Boca del Dragon), during the second week of August, "he suffered a great deal from gout and ophthalmia," says Navarrete.

These two are the first distinct and positive historical references to Columbus suffering from gout. As for the transitory ophthalmia, I have already stated my opinion about it, only adding that it is a frequent complication of rheumatism but not of gout. Now I shall endeavor to prove that Christopher Columbus was never affected with gout, which is contrary to the firm belief of all accepted standard non-professional authorities.

Gout is more decidedly hereditary than rheumatism, and occurs in those who live high or drink

large quantities of malt liquor, or is seen in persons whose systems have been impregnated with lead. The greatest maritime genius of the fifteenth century was of too humble birth to have inherited the gouty diathesis, and too frugal in his habits to have acquired a malady the result of over-indulgence in the pleasures of the table, especially when cruising with very scanty provisions; surely there could not have been much lead in his system. Gout is characterized by the occurrence of paroxsyms of severe pain in a small joint,—the great toe usually. Gout in the foot is called *podagra;* gout in the hand, *chiragra;* and gout in the knee, *gonagra.* But Columbus suffered pain in several joints, of the upper as well as the lower extremities, whose movement was slow, rigid, and jerking, so that it was accomplished with difficulty, and his disorder therefore could not very well be placed under any of these three Latin divisions of gout.

There are yet two very important diagnostic factors against the theory of gout, viz., the season of the year in which exists the greatest tendency to the occurrence of the seizures (winter), these two first attacks taking place in the middle of the summer, and moreover that we meet in the course of the distemper with no cardiac complication, at least no valvular affection, as so constantly happens in rheumatism, and which sequel was the ultimate result of the disease that launched Columbus into eternity; and furthermore, in complete possession of all his mental faculties, which does not occur in gout where the morbid changes induced in the kidneys give rise to cerebral symptoms at the time of death.

The Admiral arrived at Isabella on the 30th of August, was immediately put in irons and thrown into prison by Bobadilla, who had come from Spain a week before. While confined in prison, and deprived of intercourse with any one, loaded with fetters and chains, in the fort of the little town, he was sick for several days, probably with intermittent fever or rheumatic pains, improperly called gout. He was put on board a vessel and sent to Spain early in October, 1500, arriving at Cadiz on a December day, and as he passed, his stately and venerable figure burdened with shackles and chains, through the streets of that city, he awakened a great popular outburst of sympathy for him and indignation at his persecutors, which reproof immediately repercussed in the wealthy cities of Seville and Granada.

Fortunately the passage had been calm and fair, and of but moderate duration, rendered also less disagreeable by the kind treatment of Alonzo de Villejo, to whom he was given in custody.

While on board the ship he had written a long and eloquent letter, full of pathos, to Dona Juana de la Torre, the nurse (*ama*) of Prince Juan, a lady high in favor with Queen Isabella, to whom her brother Antonio, a fellow-voyager of Columbus, straightforth carried the epistle on landing. In studying the ideas and wording of this remarkable letter, I find that his reason was just beginning to lose equipoise under the strain of the great humiliation he was then enduring, and the disordered condition in which his unexpected, unwarranted, and unworthy arrest had thrown all his private affairs. This clouded state of his intellect suffered a more aggravated relapse on two or three other occasions, when in moments of despair and heartrending anguish his religious enthusiasm completely overpowered his understanding, and of which I will speak later on.

During the seventeen months elapsing between his arrival from the third voyage and his departure again on the fourth, not a word, that I know of, is said in history about Columbus being afflicted with gout, which is a strong argument against the theory of his suffering from that malady. When much better fed, in company of cavaliers and rich men, he should have had more paroxsyms of that "eminently respectable disease," as Sydenham used to call it, than when living as a sailor on strange seas, short of the most necessary provisions.

The equipment of the fleet on the fourth and last voyage consisted of four small caravels with crews numbering, all told, 150 men. Columbus' brother Bartholomew, and his younger son Fernando, then a boy of fourteen, accompanied him. They sailed from Cadiz on the 11th of May, 1502, and on the 7th of November, 1504, after a tempestuous voyage and narrow escape from shipwreck, he landed back at San Lucar de Barrameda, so sick and thoroughly worn out that he could not personally go to Court to give an account of his new discoveries, but had to send in his place his youthful son, Fernando.

While sailing along the coast of Honduras, on the middle of August, 1502, there was an incessant tempest with heavy rains and such thundering and lightning that "it seemed as if the end of the world was at hand." The vessels had been so violently tossed about that their seams opened, and the provisions were damaged by the rain and by the leakage. During a great part of this time Columbus "suffered extremely from the gout, aggravated by his watchfulness and anxiety." His illness did not prevent him, however, from attending to his duties; he had a small cabin constructed on the stern of his vessel, from which, even when lying down on his bed, he could keep a lookout and direct the course of the ships. Columbus himself says that "many times he was so ill that he thought his end approaching."

The little fleet at last succeeded in passing the Cape Gracias á Dios on September 14, after struggling with the wind and the waves and the currents for about forty days. When on the coast of Veragua (Republic of Costa Rica), on the middle of October, many days of constant mental disturbance and nights of sleepless anxiety, preyed upon a constitution undermined by a slow blood poison, by grief and disappointment, by hardships, by unhygienic surroundings, and by want of proper treatment, finally producing an illusory vision, deemed by Columbus in his religious conceit of private revelation to be really God-sent and supernatural. In a letter to the sovereigns of Spain he gives a very solemn account of this hallucination, in which he heard in the course of a vivid dream a piteous voice reminding him of Scriptural passages to comfort and encourage him to trust in the Almighty. Such psychical perturbation can easily be explained if we take into consideration Columbus' highly imaginative cerebration, his exalted religious conceptions, his daily devotional exercises, and his deep-rooted belief that he was the chosen one from among men to carry the light of the true faith into far-distant, unenlightened and pagan lands. This favorable field, when well ploughed by a chronic and painful disease, and harrowed by the iron teeth of grief, could without difficulty produce a momentary phonomania. Like the firm trust

of all impassioned religious or political reformers, his sublime reliance in his lofty predestination certainly served him to overcome the multitude of obstacles he found in his path. And here we find the proof once more of the undiscernible and undefinable boundary between insanity and genius.

Whilst visiting Jamaica in the latter part of June, 1503, in which island he was obliged to spend a year, Columbus suffered another attack of the so-called gout, and malarial fevers of long duration, on the shores of the harbor of Santa Gloria, known to-day as St. Anne's Bay, which rendered him a cripple.

During all this fourth voyage his mental and physical condition was very much weakened, though hope, to be sure, had not altogether departed from his ardent and sanguine nature; but it was a hope that had experienced many reverses, and its pinions were sorely clipped. His voyages of discovery always involved hardships enough to wear out the strongest human frame, having to navigate among unforeseen dangers, without chart or pilot or previous knowledge of the countries, their inhabitants or language; to keep a constant and anxious watch at all hours, in all kinds of weather, subject to the caprices of the wind and without proper food. Age was already rapidly making itself felt when Columbus undertook this, his last, and most disastrous cruise (55 years old), the ultimate ten years of which were filled with care, physical ailments, and troubles of many sorts. For several weeks before he landed back at San Lucar de Barrameda, his tiny ship was thrown hither and thither in mid-ocean by violent winds and hill-like waves, combined with tropical showers; all that time Columbus was suffering the most excruciating pains from his old malady, until his crazy and shattered little bark anchored in the harbor, with her haggard, emaciated, crippled and almost blind master aboard.

From San Lucar he had himself conveyed to Seville, where he hoped to enjoy the much-needed rest of mind and body, and to recruit his health; but fortune continued to frown upon him, for he ascertained on arriving at that city that all his private affairs were in a state of confusion and entanglement. Since he had been sent to Spain from San Domingo, shackled like the vilest of culprits, when his house and effects had been seized and confiscated by order of Bobadilla, his rents and dues had been unlawfully retained in possession of Governor Ovando, the successor of Bobadilla in command of the Island. He was, therefore, in actual penury. He remained at Seville during the rest of that winter and part of the following spring, a victim of his chronic and painful illness.

At the beginning of May, 1505, feeling a little better, he went with his brother Bartholomew to Court, then sojourning at Segovia, to personally plead for his rights. While there "he was once more confined to his bed by a tormenting attack of the gout, aggravated by the sorrows and disappointments which preyed upon his heart." From this couch of anguish he addressed one more pathetic appeal to the justice of the King, but ah, all in vain!

He sought consolation in devoutly reading the prophecies of the Holy Scriptures and the writings of the Fathers of the Church, and wrote a religious book and a final long letter, full of poetic mysticism, to that selfish and ungrateful King Ferdinand, the noble and magnanimous Queen Isabella having already expired the year before. In making a hurried psychological study of these two opuscules, I find that for the third time the intellect of Columbus was clouded with delusion. The extravagances of his overwrought imagination must not, however, be entirely judged as they appear at the present day. They were in perfect sympathy with the quintessence of those times, when the spirit of the Crusaders was still rampant, when the conquest and fanatical expatriation of the Moslem had just been accomplished, and the Inquisition permeated, enslaved and terrorized the whole Spanish kingdom.

So poor and helpless at last he found himself, after uselessly following the Court from place to place, that he accepted the modest home offered him by kind-hearted and charitable Gil Garcia—a sailor—at Valladolid, Magdalen Street (now called Colón). There, propped up in his lowly bed, suffering just as much from the cardiac complications of chronic rheumatism as from mental anguish and dejection, and want of proper medical attendance; looking a great deal older than he really was, but with loftiness of heart, the religious enthusiasm of an old prophet, and Christ-like forgiveness for all his persecutors, under those long, curling white hairs of his, and the gray robe of the order of St. Francis—of whom he had been a great devotee—in which he begged to be clothed and buried, he was uttering words which, to anybody unacquainted with his life, would have seemed very strange indeed. For he was speaking to his two sons and his confessor, Fray Gaspar de la Misericordia, of little else but of another world—not the world of the unknown and unknowable, nor the house not made with hands, eternal in the heavens, to which he was soon to go—but of a New World on this planet of ours, where he had been; of which he was the first to give a faithful account, and to bring from it men of an unheard-of race, and most wonderful specimens of the animal and vegetable kingdoms; a world which should be forever associated with his name, and which will be without any doubt for all coming ages an inexhaustible field for commerce, for industry, for agriculture, for benevolence, philanthropy and liberty—a true material salvation of the whole human race.

He took his departure from this life on Ascension day, May 20, 1506, a servant satisfied of his work and honorably dismissed from the visible terraqueous globe, which he had very much enlarged, to go to the invisible and everlasting hereafter, whither all of us are marching on, pronouncing with great unction these sublime Latin words: *In manus tuas Domine commendo spiritum meum.*

What was the cause of Columbus' death, and what part did the medical profession take in the discovery of America?

I have just remarked that he died from the cardiac complications of chronic rheumatism, thus contradicting all the standard historical authorities who assert he was a victim of gout. My humble opinion is that the chronic form of poly-articular rheumatism was not developed slowly, but succeeded to an acute attack, and that this first invasion of the disease occurred on the last days of June, 1498, after Columbus left the Cape Verde Islands, on his third voyage. "The atmosphere was loaded with clouds and vapors; neither sun nor stars were to be seen; a sultry, depressing temperature prevailed," says Washington Irving. A little farther along in his narrative the same high historical authority adds that on July 13

the ships "had entered a region where the whole sea was like a mirror, and the vessels remained almost motionless, with flapping sails; the crews panting under the heat of a vertical sun, unmitigated by any refreshing breeze." The sailors lost all strength and spirits, and there was in the atmosphere, owing to drizzling showers, that combination of heat and moisture so well adapted for a genuine attack of acute rheumatism, and entirely unfavorable for the development of a paroxysm of gout. But the presence of the rheumatic poison was clearly evident in the accompanying "violent fever." Gout is not ushered in by high fever, and during the hours of severe suffering the skin usually remains dry, a general sense of relief being experienced just as soon as a profuse perspiration sets in. A warm climate exerts for that reason a beneficial effect on the occurrence of the seizures of gout. As for the peculiarity of the first attack making its appearance at night, between the hours of 12 M. and 5 A.M., I can not say anything, because the exact time at which it occurred is nowhere recorded.

Those writers who have minutely described the last few months of the life of Christopher Columbus state that when he was confined in bed *his body was extraordinarily swollen from the chest downwards*. Here we have the cardiac dropsy met with as the final and fatal result of an old inflammation of the endocardium, brought about almost invariably by an attack of acute rheumatism. The shrinking and induration of the valve curtains of the heart and their tendons, as a sequel of endocarditis, and the hypertrophy and dilatation of the cardiac walls to which these pathologic changes give rise, owe their chief importance to the purely mechanical disturbance of the blood circulation thereby induced, the action of the heart becoming more and more feeble every day until death at last closes the scene.

The cardiac complications of rheumatism (endocarditis, pericarditis, myocarditis) are by far the most frequent, being present in more than 50 per cent. of all cases, and constitute the commonest cause of death in this disease. Bouillaud was the first to recognize the frequency of such accidents, and his great discovery that "their occurrence is the rule rather than the exception in rheumatic fever," has stood the test of all subsequent observers, and remains to-day one of the best established facts in clinical medicine.

Having finished saying what I had to say about the medical history of the immortal discoverer of this New World of ours, I will end by putting upon record the names of those belonging to our noble profession who directly contributed to the realization of such a momentous event in history. The clear intuitions of Avicenna "the Prince of Physicians," as he was called; the advice and encouragement given to Columbus by the Florentine physician and distinguished cosmographer, Paul Toscanelli; the modest village doctor, Garcia Fernandez, who, as an improvised expert in mental diseases, won for the perambulating genius the respect and sympathy of the worthy prior of the Monastery of La Rabida; the very important fact that, although it is proved beyond doubt that no priest accompanied Columbus on his first voyage, there were two representatives of our profession among his followers—Maestro Alonzo and Maestro Juan—two ship surgeons or *fisicos;* and last but not least, the learned author of the very first scientific report on America, Dr. Diego Alvarez Chanca, who came over with Columbus on the second voyage, and saved his life during a protracted and dangerous attack of typhus fever. All these facts, scattered in many old books and pamphlets, worm-eaten in dusty archives, are here collected and presented as *pièces justificatives* of the noteworthy part taken by the medical profession in the discovery of the Western Continent.

Almost every one who has written the life and voyages of the immortal Genoese navigator,—and their name is legion—speaks of the probable sources of his information about the existence of a western route to the East Indies. But none of them, that I am aware of, refers to the writing of Avicenna as a possible fountain of suggestion. This eminently successful physician and most wonderfully learned man was born at the village of Afshend, in the province of Bokhara, Turkestan, Central Asia, in 980 A.D., and died in 1037. Besides his resplendent medical knowledge, he was a profound philosopher, a skilful rhetorician, excellent geometer, well versed in astronomy and astrology, a shrewd theologian, an accomplished naturalist, and a very fine musician. During the last fourteen years of his life he wrote a considerable number of works on widely different subjects, among which his treatise entitled, "De Complexionibus," section 1, chapter 1, where he cites the opinion of Aristotle expressed in his work, "De Causis Propietatum Elementorum," is an able speculation on the existence of the Antipodes.

Paolo del Pozzo Toscanelli was born at Florence in 1397, studied medicine in his native city and became one of the most famous astronomers and cosmographers of his time. On account of his great reputation in nautical science he was constantly consulted by bold navigators from different countries, who unhesitatingly followed his advice and the course marked down for them in the charts Toscanelli himself drew. He was thoroughly acquainted with the scientific and geographical literature of the Greek and Latin classics; became one of the keepers of the celebrated Florentine Library at the age of 30 years; erected, about 1468, the famous gnomon on the uppermost part of the dome of the cathedral at Florence; died in that city on the 15th of May, 1482. To this distinguished member of our profession Columbus applied, beseeching his opinion and advice in regard to his contemplated stupendous enterprise, as had also done a few days before, on the same subject, the powerful King of Portugal. Like the truly scientific and generous man that he was, not only did he immediately answer the two letters of the then obscure sailor, confirming him in his views of the figure of the earth and the practicability of a voyage westward to India, but also sent him a chart drawn by his own hands in which was marked and explained the course Columbus should follow to reach there in safety. This very chart was the one used by the Admiral on his first voyage of discovery. He showed it to Martin Alonzo Pinzon, captain of the caravel *Pinta*, while sailing on the *mare incognitum, tenebrosum*, and both frequently sat on deck discoursing upon it. The historian Las Casas, a contemporary and friend of Columbus, says he saw it and had it in his possession. But it has been irretrievably lost.

The ancient convent of Franciscan friars dedicated to Santa Maria de la Rábida—where Columbus halted, accompanied by his son Diego, hungry, thirsty,

dressed in tatters, full of dust and tired from having tramped many miles—is situated at about half a league from the village of Palos de Moguer, in Andalusia, Spain. The humble physician of this little maritime town was Dr. Garcia Fernandez, who enjoyed the friendship and high regard of the respected Prior of the Monastery, Juan Perez de Marchena. This patriotic friar detained Columbus there as his guest, and, diffident of his own judgment as to the sanity of the distinguished-looking foreigner, sent for his scientific friend, the village doctor, to converse with him and inquire into his mental state. Dr. Fernandez was equally struck with the intelligent appearance and entertaining conversation of Columbus. He discussed with him several geographical and astronomical topics, and became convinced that he by no means was talking to a madman but to a genius. His clear discernment at once detected the possibility of the adventure Columbus was pursuing, and won for him, with his favorable report to the Prior, the good will and invaluable aid of that influential religious man. What the result would have been if that unassuming and kind village doctor had given an unfavorable opinion, nobody can tell.

Among the few brave men that dared accompany Columbus on his first voyage of discovery to America were two representatives of our philanthropical profession. Maestro Alonzo was the name of one, and Maestro Juan that of the other. The first seems to have been the better known of the two, and came over in the caravel *Santa Maria*, commanded by Columbus, while the second was more of a friend of Martin Alonzo Pinzon, and embarked in his vessel *Pinta*. This last remained at the little fort of Navidad when Columbus returned to Spain, being one of the thirty-eight men massacred by the native Indians of San Domingo, and thus paying with his life for his professional devotion. The small band of foolhardy Spanish colonizers were under his medical care.

I have already referred to Dr. Diego Alvarez Chanca, who came with Columbus on his second voyage, and saved his life and that of many hidalgos at the point of death in the Island of Hispaniola or San Domingo. The account given by this distinguished man of science to the municipal council of his native city is undoubtedly an unpretentious evidence of the wide range of his scientific knowledge, and constitutes the first sketch of the flora, the fauna, the ethnology and climatology of our dear American continent. He also wrote, on his return to Spain, a work entitled, "Comentum Novum in Parabolis Divi Arnaldi de Villanova," published at Seville in 1514.

In conclusion, we, as a class, have sufficient reason to feel proud of the active part taken by members of the medical profession in the discovery of this beautiful land of ours, where the "divine right of kings" is no longer possible, and when the great Chicago World's Columbian Fair has given imperishable existence to the memory of its discoverer.

194 West 10th Street.

CONTRACTION OF FINGERS.—Apply upon the palm of the hand a large quantity of the following ointment: White vaselin, 30 grammes (1 ounce); iodid of potassium, 2 grammes (31 grains); iodin, 1 gramme (15½ grains); cover with thick layer of cotton, rubber cloth, and moderately tight bandage. Renew application daily for three or four weeks. (VULPIAN, *La Presse Médicale*, Feb. 10, 1894).—*Universal Medical Journal*, April, 1894.

TRANSPORTATION OF WOUNDED IN WAR.

The opening paper of the Symposium on Transportation of Wounded, at the meeting of the Association of Military Surgeons, Washington, D. C., May 2, 1894.

BY CHARLES SMART, M.D.
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In writing history it is necessary to begin at the beginning, thereafter following our subject along the stream of time until we reach either the end of its course or its present anchorage; but the beginning of our present subject is lost in the haze of the distant past. In the earliest dawn of history we find men fighting; and battles, no doubt, were fought even in the primitive days. The history of the human race is, in fact, a history of battles and their results. But history had no eyes for those who dropped out of the struggle; seldom are we told of the wounded. Nevertheless, we must credit these old time warriors with sympathies which led them to care for their wounded, so that our subject finds a beginning as far back and as undefined as history itself.

We may assume that slaves, servants, companions-in-arms, friends or relatives cared for the fallen as soon as the exigencies of war permitted, and that the methods differed with race and nation, mode of warfare, and an infinity of small or local conditions. We get an occasional glimpse of these in the chronicles of the past, but they have merely an antiquarian interest. In the feudal age each chief looked after the welfare of his armed vassals, if from no higher motive than personal interest, for his own power depended on the strength of his following. A victorious army imposed the care of its sick and wounded on the non-combatant population, whether friends or enemies, and the system of ransom which followed that of slavery often obtained for a fallen enemy greater care and consideration than he would otherwise have received. When the companies of feudal chiefs became replaced by commands recruited at large, provision was made for the wounded by the central power or government.

The outbreak of our Revolution brought us first face to face with this question. Our improvised army was modeled on that of England, and English medical methods necessarily influenced the elaboration of our own. These looked only to providing the army with intelligent medical men, efficient nurses, and the needful allowance of medical and surgical supplies. They were of infinite value when brought into immediate relationship with the wounded, but there was no special provision to insure that this would be effected. When a battle was in progress the medical men, nurses and supplies constituting the field or regimental hospitals, were somewhere in the rear of the army with its other impedimenta, for at that time the medical armamentaria were regarded as impediments pure and simple,—their value as preservative of the integrity of a line of battle being unrecognized. In Europe, where frequent wars had reduced the methods of the battlefield to system, the regulation distance of the impedimenta behind the fighting line was not less than one league. Here, during the battle, the medical men of the army attended such of the wounded as were able to reach them, or such special cases, generally officers of rank, as might be brought to them; and as in a general engagement there was usually no lack of such patients, the surgeons naturally considered themselves to be doing excellent and valuable work, although the poor fellows stricken on the field and unable to leave it without

assistance, derived no comfort from their proceedings. If defeated, the army withdrew, leaving the wounded to fall into the hands of the enemy; if victorious, arrangements were made to have them brought to the hospital. Servants, bandsmen, and camp followers were sent to the field, and a force, volunteer or impressed, of the inhabitants of the vicinity, with all needful or available wagons, was organized for this work of mercy.

This, the usual method of bringing off the seriously wounded, was that adopted at Spire, for the wounded of the French Army of the Rhine under General Custine in the autumn of 1792. Although time honored by the practice of generations of military men, it did not meet with the approval of a young surgeon, D. J. Larrey, who had recently joined Custine's command. He thought that some effort should be made to reach and assist those men who were dying from shock, exposure and needless loss of blood, and he was positive that lying uncared for on the field for twenty-four or more hours was not a desirable preliminary to amputation for gunshot injury. His disapproval of the regulation method became strengthened when, some time later, the wounded in an engagement at Limbourg had to be abandoned because before the arrangements for their removal were completed the defeated army received strong reinforcements. With the consent of General Custine he procured some light wagons and organized an *ambulance volante* or flying hospital, intended to bring assistance to the wounded and remove them from the field during the battle. Its first service demonstrated its value. A strong force had been thrown forward to guard a mountain pass against the advance of the Austrians, and Larrey, in anticipation of an engagement, accompanied it with his ambulance wagons. The Austrians discovered the isolation of this force and surrounded it; but the French, by a vigorous assault, broke the enemy's line and succeeded in rejoining the main body, bringing with them in the ambulance wagons the wounded who otherwise would have been left on the field. His ambulance for a division of troops consisted of eight two-wheeled two-horse spring wagons and four four-wheeled four-horse wagons for the wounded, with four store wagons and a *personnel* of over one hundred men, of whom fourteen were surgeons. Its value was so well appreciated that shortly afterwards Larrey was sent to Paris to organize ambulances for all the divisions of the army. He joined Bonaparte in his Egyptian campaign, and personally supervised the operations of the flying ambulances of the French armies from that time until the Napoleonic sun set at Waterloo.

Meanwhile another surgeon of these wars, Baron P. F. Percy, serving with General Moreau's command, was also endeavoring to solve the problem of prompt aid on the battlefield. As the hospital trains were not allowed on the field on account of the uncertainty of the issue, the risk of capture, and the certainty that they would be in the way of the troops during some part of the action, Percy's idea was to transport to the field the essentials of surgical aid, without blocking roads or impeding military movements. The surgical wagons which he constructed to effect this were modeled on those of the light artillery. The art of preserving life, he considered, should compete in activity and promptness with that of destroying it. Each was drawn by six horses, and carried eight surgeons and as many orderlies, with instruments, stretchers and supplies. When a sheltered spot near the fighting line was reached, the surgeons gave professional aid to the wounded who gathered near them, while the stretchers attached to the wagon were put to excellent service by the orderlies and men temporarily spared from the combatant ranks. When the work was finished, the wagon was driven to some other part of the field where surgical assistance was in demand.

This wagon did much good during the short time it was in use. It gave aid to those who were able to reach it, but who could not have reached the hospital train two or three miles beyond; it gave vital assistance to many who otherwise would have died, and it brought aid and comfort to those who otherwise would have been exposed without either for hours; but particularly did it demonstrate how much good could be effected by the presence of medical officers, although the regulation hospitals and their supplies were miles away. It contributed as much as the ambulance volante to the immediate comfort and surgical safety of the wounded, but it left them on the field until the usual arrangements were made for their removal. Percy speedily recognized this inferiority of his system, and having abandoned the wagon he devoted his energies to adapting its *personnel* to work in connection with Larrey's ambulance.

When with General Moreau in Spain he organized a company of brancardiers or stretcher-bearers from selected volunteers from the regiments. Each man carried one-half of a litter as a part of his equipment. His lance or pike became a litter-pole by removing its head; his sash formed one-half of the bed of a litter when laced lengthwise to a similar piece by eyelets; and on top of his knapsack he carried a horizontal traverse having at each end a hole for the pole to pass through and a downward projection which formed one of the legs of the completed litter.

Percy's views, however, went further than the mere organization of bearer companies. In his efforts to provide for the wounded he at one time endeavored to effect a re-organization of the medical service in the field—defining the rank of its officers and their staff positions, with a major-general as the chief, three inspectors-general, sixteen lieutenant-colonels, etc. The Emperor declined to approve this proposition, as it failed to include the physicians and pharmacists of the general hospitals whom Percy seems to have intentionally omitted from his scheme; but the brancardier system was so successful that in 1813 it was formally adopted by the Imperial armies.

Some combination of bearer companies and ambulance wagons is now in use in all armies; but the minutiæ of the system are in many instances imperfect. Up to the year 1821 the Army Regulations of this country were silent on the subject of transportation of the wounded. The Army Medical Department was apparently left to accomplish its ends by any available means, and presumably these would have been such as were known to have given satisfactory results elsewhere. In the year mentioned, however, the Regulations compiled by General Scott, prescribed the method of aid on the battlefield in language clear as to its provisions, and yet so elastic in its requirements as to leave the Department free to exercise full discretion in its management. The medical director was authorized to establish *field* or *movable* hospitals, and these in the revised edition published

in 1825, were called *ambulances*, in advantageous positions behind the line of battle, with smaller sections organized in like manner to follow detached columns and even to give succor to the skirmish line. The Quartermaster's Department was directed to provide the wagons after consultation with the Medical Director, but these wagons were to remain under the conduct of an officer or agent of that Department. The direction to employ hired labor for the purpose of manning the ambulance system was the weakest point in the program. It was, no doubt, a concession to military custom which up to this time had been broken systematically only by the organization of the brancardiers of the French army.

During the period of uninterrupted peace which occurred at this time, our War Department officials became absorbed in current work relating to the movements of small detachments of troops in the West. War on a great scale dropped from their consideration, and in consequence the 1821 provisions for battlefield service were omitted from the Regulations published in 1834, 1835 and 1841. The only provision for assistance to the disabled in these official publications shows the narrowness of mind contracted by official routine during those years: "For the accommodation of the sick and disabled, a wagon will be attached to the rear guard when necessary and practicable, and a surgeon will attend to give assistance and see that no improper persons are suffered to avail themselves of the accommodation."

The war with Mexico then came upon us so suddenly that in a hasty re-issue of the Regulations in 1847 there was no time to elaborate and incorporate a medical system for field service; and the Medical Department was left to do the best it could, trammeled, however, by its dependence for transportation on the Quartermaster's Department. System was evolved in the progress of the war, and the results were embodied in 1857 in the next issue of the Regulations. But in these there was a great lapse from the provisions of 1821. The latter made the Medical Department a free agent to enable it to sustain its high responsibilities and gave it the Quartermaster's Department for collaboration and assistance. In this way they were in advance of the methods of all other armies; but the Regulation issued one-third of a century later fettered the Medical Department with the bonds of slavery to a so-called ambulance corps. The surgeon dropped to the status held by him in foreign armies, as the mere attendant on the wounded, when permitted by the officers of another department to come into personal contact with them. Even the medical director, a director only in name, was ordered to take his post for professional work at the principal depot.

The Regulations of 1861 found us engaged in a great war, responsible before public opinion for the care of the wounded, yet unable to accomplish anything without the consent and active coöperation of officers who were not held to this responsibility. Many of these officers were volunteers, ignorant of their powers under the Regulations, and actuated, as were the regular officers of the Quartermaster's Department, by no petty jealousy of position, rank or power, but solely by a desire to accomplish the end in view of doing the best for the wounded under the conditions of the time. The medical work on the battlefields of the Civil War progressed therefore under an intelligent appreciation of what the Regulations should have been, rather than of what they were—and as a result an ambulance corps was organized, a combination of Larrey's ambulance volante and Percy's brancardiers, the whole under the orders of the Medical Director, although officered for purposes of domestic economy and property responsibility, by details from the line of the Army.

Under these provisions the ambulance and field hospital service of the United States armies became models for the military surgeons of Europe. Their ability to deal with large numbers of wounded was fully demonstrated during the series of battles and marches, beginning with the crossing of the Rapidan and the Battle of the Wilderness and ending six weeks later with the commencement of siege operations at Petersburg, Va. On several occasions during this trying time the headquarter wagons of general officers were turned over to the Medical Department for field work; but this indicated no weakness of the system, merely a shortage of ambulance wagons—and it is to be observed that there would have been no shortage but for the imminence or the actual occurrence of an engagement during the temporary absence of some part of the ambulance train at the base of supplies. Ordinarily in the absence of railroad transportation, empty supply wagons were utilized for the evacuation of the field hospitals, but during this active campaign the wagons of the ambulance volante were called upon to do some duty *d'arrière* as well as their own special duties *d'avant*. Practically the work of the battlefield and field hospitals was done with the organization that we now have in the Medical Department of the United States Army; a staff corps of surgeons and a similar corps of enlisted men thoroughly educated in the principles and drilled in the practice of first aid. These corps did not then have a legal existence. They were extemporized by medical directors out of regimental and other surgeons, and regimental and other nurses, and hospital attendants. But since 1887 a special Hospital Corps, authorized by Congress, has been organized and educated. At the present time its members are scattered at 120 different posts, but if an order were to be issued for the mobilization of our Army, its Hospital Corps could be organized into bearer companies and field hospitals as quickly as the troops could be brigaded.

Instead of being a loose aggregation of regimental and hospital surgeons, incapable officially of doing anything but practice their profession when the military exigencies permitted or required them to do so, the Medical Department is now a compact body, responsible for the care of the sick and wounded, and having the powers of commanding officers over the *personnel* and material specially provided for carrying out its purposes.

Gentlemen, when I was asked to contribute to the history of the transportation of wounded men from the field of battle, my mind ran back to the esquire and his wounded knight—the officer brought off in his sash by servants, the Scottish Highlander in his plaid by clansmen, and the soldier generally in his blanket between two pikes or muskets or pic-a-back on the shoulders of a friend; but a little thought showed me how immaterial were these trifles as compared with changes in the status of the medical officer, and the power which he could exercise in providing facilities or in rendering them available. In this really and not in an improved ambulance

wagon or a modified litter sling, lies the progress and history of the transportation of the wounded from the field.

The car of progress moves slowly. For some undefined reason, medical men labor at a disadvantage in fields of practical work, although these may be allied closely to their own. It seems to have been assumed that because a man is intelligent enough to be capable of taking care of another in sickness or injury, he should be regarded as incapable of doing anything else with the ability that might be expected of one who has never been exposed to the deteriorating influence of medical knowledge. Although the French surgeons did so much to mitigate suffering and save life on the battlefield by suggesting and organizing new systems and testing and demonstrating their value, it was not until 1882 that the Medical Department of the French Army was given command of these organizations, nor until seven years later that it was empowered to control its supplies. During that long period its members remained merely doctors, caring for the sick and instructing nurses and stretcher-bearers, whose services were afterward controlled along with their own by officers who, in the interests of the wounded, should have been their assistants. And although Percy a century ago recommended a staff corps of military surgeons, the French still maintain their regimental officers and "soldats infermiers" or regimental nurses, the former equivalent to our medical officers on duty at the first aid stations and the latter to our company bearers.

The Germans perfected their field medical service during the war of 1870. Besides special aid on the fighting line, they have a bearer company of about two hundred men to each division and a reserve company to each corps. To 36,000 men, forming a corps of two divisions, they have therefore about six hundred men for bearer duty; but the field hospitals of the corps are manned by as many more, so that exclusive of medical officers, the sanitary force is equal to over 3 per cent. of the troops in line. The Medical Department controls its men, transportation and supplies.

The conservatism of the British military authorities was slow to permit new ideas to modify the sacred customs of service, so that although the medical officers engaged in the campaigns against Napoleon were well aware of the advantages of the methods of Larrey and Percy, and made many appeals to the government to be permitted to do likewise, these were uniformly disapproved. The Duke of Wellington was chiefly responsible for this, as he would not hear of encumbering his army and impeding its movements with these wagons. Wounded Frenchmen were succored while the din of battle was yet in their ears, but their British opponents had to lie exposed, not only during the continuance of the struggle, but during the long watches of the night until arrangements were perfected for their removal. The available wagons of the supply departments and such as could be hired or impressed into the service were brought up along with the bandsmen, camp followers and hired labor to give the long delayed aid and transport the sufferers to the hospitals. The stretchers used in loading consisted of a canvas bed between two pikes or poles, with no cross-pieces to keep them apart. The long wars of the early part of the century improved the organization and internal economy of the British field hospitals, but effected no immediately beneficial change in their methods of transportation. Nor was anything done until the outbreak of the Crimean war, when a Hospital Conveyance Corps was hastily organized and shipped with the troops. This was so decided a failure that the work of transporting the wounded had to be transferred to the train of the Subsistence Department. The wagons of the Conveyance Corps were too heavy; no provision was made for repair in case of accidents, and the men were old, broken down and dissipated soldiers weeded out of the regimental ranks, rather than selected on account of special fitness for important duties. After the Crimean war, a Medical Staff Corps was organized in order to provide a better *personnel* for the care of the wounded than could be obtained under the old system of regimental details. I need say nothing here of this regimental system, as our regular army officers are personally familiar with its objectionable features, some of which I delineated in a paper read at the last meeting of this Association. The Medical Staff Corps proved a failure on account of being composed of hired civilians. In 1873, however, an important change was effected. The British abolished their regimental system of medical appointments, and established a staff corps of officers and a hospital corps of enlisted men such as we have now in the Army of the United States; but these medical officers have one disadvantage yet to overcome. Their ambulances are not under their control,—the officers of the Army Transportation Corps command them.

And so in all armies we now find bearer companies and ambulance trains with unimportant differences in their composition, and more important differences in the control exercised over them by those most interested in the welfare of the wounded. Patriotic officers of corps other than the medical, may claim as much interest in their wounded countrymen as any man could have, when not bound by special ties of blood or friendship, and so far as their knowledge goes they are no doubt warranted in making the claim; but they have no knowledge of the interest of the medical man in lives or limbs susceptible of being saved. He is interested in the wounded on account of what he as an individual may be able to accomplish and also on account of what medical and surgical science may be able to effect; and to these interests, of which the Transportation Corps or Quartermaster's officer knows nothing, he may claim a full share of interest on behalf of patriotism.

But every system for the care and transportation of the wounded, no matter how carefully organized, may occasionally be crushed and paralyzed by the iron heel of war. Of what avail, for instance, were Larrey's ambulances on the disastrous march from Moscow when men, narcotized by cold, fell and were shrouded in snow before the heart had ceased to pulsate,—when they were cut off on the Berezina, and the great surgeon was, himself, saved only by being passed over the blocked, broken and enfiladed bridge on the shoulders of the men, or when the Sisters of Charity at Wilna were endeavoring to rally him from his exhaustion at the end of that terrible march.

Thanks to the better parts of human nature, scenes of this kind will be of less frequent occurrence in war hereafter. To alleviate the sufferings of the wounded, commanding generals have sometimes made temporary arrangements for the neutrality and

safety of surgeons and others engaged in the humane work. The success of an agreement of this kind in 1743 between Stair and the Duc de Noailles led Baron Percy in 1800 to draw up a similar compact, which Moreau signed and sent to the Austrian General Kray, but the latter declined to entertain the proposition. Commanding generals have not plenary powers. Kray was, no doubt, tied down by the military power at Vienna. But an arrangement of this kind has now been effected on behalf of the wounded of all civilized nations by the influence of the International Red Cross Society. I need not dwell on the provisions of the various articles of the Geneva Convention, the practical operation of which has been tested in the wars of Europe since 1864.

During the past century much progress has been made in the evolution of the ambulance wagon. Larrey's two-wheeled vehicle consisted of an oblong box suspended from springs at its four corners, closed by folding doors in front and rear, and having openings with sliding shutters in the sides for the admission of light and air. On the floor were two padded litters on castors; and, to facilitate the handling of these when loaded, four iron handles were attached to the sides of each.

The first ambulance wagon officially recognized in this country was the Moses wagon, which was examined by a medical board in 1859. It was evidently intended to meet the special requirements of our Western service, the chief characteristics of which were long marches made by small commands. It was reported to be a kind of large omnibus fitted up as a traveling hospital, and capable of extending its shelter at night or in camp by the use of attached canvas so as to accommodate about thirty persons.

The Wheeling ambulance, weighing only 700 to 800 pounds, was used extensively during the Civil war. It was furnished inside with padded seats for eight, convertible into beds for two. By some, it was considered too light or frail for field service, but it was simple in construction, easily kept in repair, and a matter of fact in many of the divisions of the Army of the Potomac, it survived the war after participating in every campaign. Since then, I have seen it in Western service accompanying troops over mountain trails where none of the wagons of recent construction could have been taken. Our present ambulance wagon is an altered Rucker, converted into a medicine wagon in front by a well which contains two medicine chests. It is thus excellently suited for the current work of accompanying small commands on marches and such field service as we have on the Mexican frontier, but is wholly unfit for battlefield service in time of war. Ambulance wagons should be suited for the work required of them. Ambulance surgeons, civil as well as military, recognize this principle. This subject is on our program for discussion, but meanwhile I desire to say, as a conclusion from the study of its history, that if we again have to gather up our wounded from the battlefield by divisions and corps, it is not by means of our present wagons that we shall accomplish our object, but with shells on wheels, in so far resembling the Wheeling ambulance wagon that they can hover under shelter in rear of a skirmish line or line of battle irrespective of the presence or absence of macadamized turnpikes.

The evolution of the stretcher has kept pace with that of the ambulance wagon. The huge knife with which the men of our Hospital Corps are armed, although under the terms of the Geneva Convention they should carry no arms, recalls the head of the brancardier's pike when worn as a side-arm; but all the other parts of the Percy litter have been consolidated into a single compact piece. Two of these, when open and in use, should fit and fill the floor of the ambulance wagon, and the handles should be long enough to keep the equipments of No. 2 of the litter squad, when engaged in actual bearer work, from bumping against the feet of the patient. Majors Harvard and Hoff, who have given more study to this subject than most of our regular medical officers, will by-and-bye show us how far we have succeeded in getting away from the pike, sash and traverse of Baron Percy's brancardiers.

In this country we have had little experience on a war scale of any other mode of field transportation than the stretcher, the ambulance, and the army wagon, the last being the wagon of the general supply train, the "six-mule team" of the War of the Rebellion. Observe the use of the word, ambulance, in the last sentence, instead of the term, ambulance wagon. This is an Americanism which grew into our use of language during our civil war. Larrey understood by an ambulance an aggregation of light wagons, drivers, surgeons, attendants and supplies in aid of the wounded, and in Europe at the present time the word conveys the same meaning; but very generally in America it means merely one of the light wagons belonging to the European ambulance or field hospital. Here we have room for international misunderstanding. When I, as an American, speak of six ambulances I mean six ambulance wagons; but the military surgeons of Europe would understand me to mean six field hospitals, each having probably more than this number of the light wagons to which the term in my American usage of it has reference. It might be well for this Association to stamp an official impress on the word. To avoid misunderstanding, when the report of our proceedings is in the hands of foreign readers, I have been careful to use the word as an adjective, but in the sentence to which I have invited attention I have made use of it American fashion in order to introduce this suggestion.

In individual instances we have tried several modes of field transportation other than the hand-litter and wagon. Many of our officers, in the absence of wheeled vehicles, have taken a lesson from the Indian and brought off their wounded on improvised travois; and have thereafter given much thought to elaborating as a perfected and prepared piece of mechanism that which owes the whole of its value to the fact that it can be so easily improvised. Single litters based on a pack saddle or *aparejo* have been constructed by some of our officers, and cacolets and horse litters were tried in a small way during our war—but in every instance with unsatisfactory results as one grand disadvantage affected each and all of them, their utter valuelessness in the absence of mules or horses specially trained for their service. In the Crimea, Algeria and Mexico, cacolets were largely used by the French troops, and many favorable reports are on record concerning them. The cacolet method has indeed been characterized as "the most perfect system that has yet been devised for the transportation of the sick and wounded on the field." This shows what may be accomplished by care and

training notwithstanding the inherent difficulties of the method. American opinion, in so far as I have been able to gather it, is against the use of these many ingenious contrivances, for it is held that if a wounded man is unable to move off on foot, or to ride a gentle horse, he should be carried recumbent in an ambulance or other carefully prepared wagon or, in the absence of wagons, on a hand-litter if the distance is short, or a travois if it is long.

After the battle of Bautzen, Baron Larrey noted with much satisfaction the "convenient and expeditious" manner in which the wounded were conveyed from the field to the city of Dresden in wheelbarrows. This observation, no doubt, originated the wheeled litter and gave rise to many of the efforts that have been made to perfect it. But the wheeled litter did not occur to Larrey. His was a broad mind; and the incident showed him "how important it is for a surgeon-in-chief to study the facilities afforded by the country through which the army is passing." American surgeons have had few opportunities of acting on this suggestion. The Indian travois is their only development in this line. The loyal British subject points with pride to the fact that the sun never sets on the flag of his government. Medical officers of the British Army have studied the facilities for transportation in every quarter of the globe, and in many of its obscure corners. Their published works on this subject are filled with modifications of "native" methods. It is needless to do more than mention the palanquin, dooley, dandy, etc., because these are acknowledged to be valuable only under the conditions prevailing in the locality which originated them, and to compare unfavorably for the general purposes of modern warfare with the lineal descendants of Percy's stretchers and Larrey's ambulance wagons.

In future wars, all ambulance wagons drawn by animals except the light wagon for battlefield service, will be superseded by railroad transportation. An excellent system of hospital trains was in use at the close of our Civil War, although at first we had no experience in this line. Cars returning to the base of operations for supplies were frequently utilized for the removal of sick and wounded, with only such provision for comfort and the amelioration of suffering as could be extemporized by comrades or attendants. But after a time, on account of the frequent recurrence of movements of this kind, railroad transportation ceased to be regarded as an emergency measure, and improvements speedily followed, until carefully outfitted trains with kitchen, dispensary and office cars became a part of our medical service—and these continue to have a formal recognition in our Army Regulations.

Although we worked out our system of hospital trains by the light of our own experience, the subject had already been discussed in Europe. In 1859 a French surgeon, M. Périer, suggested an adaptation of the ordinary baggage car for hospital purposes, and in 1860 Prof. Gurlt, of Berlin, brought forward a similar proposition; but the question was first solved in practice in 1863 during the progress of our war. Since then great progress has been made in Europe, mainly through the efforts of the Red Cross Society.

The transportation of the wounded by ships of special construction and equipment, dates from the time of the Crimean War, when Great Britain provided a hospital fleet to bring her sick and wounded to the general hospitals at Scutari and thence home. Early in the progress of our war, Mississippi River steamers were altered for hospital purposes, and later many vessels, some built specially for the service, were employed on the Atlantic and Gulf coasts. The Medical Department was at first liable to be deprived of these vessels at any time by local commanders who desired their use as transports for men or supplies; but an order subsequently issued gave the Department exclusive control of "all hospital transports and hospital boats properly assigned as such." The hospital boat, like the hospital train, is recognized by existing Army Regulations, so that in case of war the development of transportation by water, as well as by land, would depend on the energy of the Medical Department and the available appropriations.

I desire, in conclusion, to make a reference to the small caliber and tunneled bullets. Some officers consider that their disabling power at long range will prevent assistance from reaching the wounded until the battle has been fought. I by no means concur in this view. Battles are not fought on the dead level where every object within range would be struck, but on broken ground where every irregularity or swell affords more or less protection from the enemy's fire. I feel confident, therefore, that the Hospital Corps and its ambulances will be found close to the fighting line in the battles of the twentieth, as in those of the nineteenth century.

THE EXTINCTION OF TUBERCULOSIS.

The President's Address before the Medical and Chirurgical Faculty of Maryland, delivered April 24, 1894.

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This Ninety-Sixth Annual Convention of this Faculty should be to us an occasion of congratulation. During the past year our losses in membership have been few, and our gains not inconsiderable.

The semi-annual meeting held in Annapolis last November was very successful, in point of attendance as well as in the character of the work accomplished.

In an address at the opening of that meeting, I said: "A legitimate object of organization is to use it as a power to secure legislation. Not legislation for our benefit as physicians, but legislation for the public good. The medical profession wants nothing for itself from the Legislature. The legislation in which the profession is interested is such as will be for the benefit of the whole people. Public health laws, medical registration laws, lunacy laws, were all intended for the good of the public, although always originated, and their enactment promoted by the efforts of physicians."

It gives me especial gratification to call your attention to some recent results of such organization in this State. During the last session of the General Assembly three measures were considered in which the medical profession were interested, and which had their origin in committees appointed by this Faculty. These measures were: The Amendment of the Medical Practice Act, the bill for an Additional Hospital for the Insane, and the Act for the Prevention of Blindness in Infants. Each of them passed

in essentially the shape in which it was recommended by the Faculty through its appropriate committees. Having watched the progress of these measures through the Legislature, I believe I may say that not one of them would have passed in satisfactory form if the members of the Legislature had not been impressed by the fact that the organized profession of the State, as represented in this Faculty, indorsed and supported them. In this connection I may be permitted to mention a circumstance which, I think, justifies this statement. When the bill for the prevention of blindness was put upon its passage in the House of Delegates there was a good deal of opposition to some of its provisions. The bill was eloquently and intelligently defended by the Baltimore City delegation and the Committee on Hygiene, but the opposition was so determined that for a time its success was problematical. It was not uninteresting to note that the only effective opposition came from those counties which are still unrepresented in this Faculty.

There is additional reason for congratulation in the fact that all the labor of getting a law passed through the Legislature was not rendered nugatory by unfavorable executive action, as has happened to the profession of this State heretofore. Having at present in the executive chair a Governor "noted for his common sense," as was happily said by Dr. Preston, in the discussion on the Care of the Insane at Annapolis, all our bills have been approved and are now laws.

These successes should only render more forcible the appeal of the Committee on Membership for a larger representation of the profession of the State in the Faculty. There is room in this organization for every honorable regular practitioner in Maryland.

I will now invite your attention to some considerations showing the possibility of

THE EXTINCTION OF TUBERCULOSIS.

For over two thousand years a portion of the medical profession has believed in the contagiousness of consumption. A not inconsiderable proportion of the laity has likewise leaned to this view. So strong was this belief at one time that toward the close of the eighteenth century a law was promulgated in the kingdom of Naples, making very stringent regulations looking to the registration of consumptives, the segregation of the sick in hospitals and the destruction of infected articles. It seems that at the beginning of the present century the prevalence of consumption in Southern Italy was so great that the expression, "See Naples and die," could almost be taken in its literal sense.

About thirty years ago Villemin demonstrated the communicability of tuberculosis by a series of experimental inoculations upon animals. The results obtained by this investigator were soon confirmed by Chauveau and others. It was, however, not until the epoch-making discovery of the tubercle bacillus by Robert Koch, in 1882, that the value of the researches of the two distinguished French experimenters was generally recognized. Since that time the view that tuberculosis is an infectious and communicable disease has gradually pervaded the profession until to-day there are probably few physicians laying claim to common sense and current knowledge who would attempt to controvert it.

Coincidently with the general acceptance of the infectious nature of tuberculosis have come experiments to more definitely indicate the common methods of infection, and endeavors to restrict the disease within narrower limits. That this is a laudable striving must be conceded when we reflect that the annual mortality from tuberculosis in its various forms in the United States is 163,500, or nearly 450 per day; and that in this city the deaths from consumption of the lungs alone reach nearly 1200 per year, a ratio of 13.69 per cent. to the total mortality. If the deaths from tuberculosis in its various forms were included, the ratio would amount to over 14 per cent., or one in seven, which is the ratio throughout the world, as stated by Koch in his memorable paper announcing the discovery of the *bacillus tuberculosis*.

In accepting the infectious nature of this disease, we must not overlook the influence of the receptive condition of the individual in determining the time or place of infection. While the value of hereditary predisposition in determining phthisis is often overestimated, we can not ignore it altogether; neither may we undervalue the effect of an acute or chronic inflammation, a traumatism, or other weakening factor in rendering the tissues less resistant, or more receptive to the infective agent. These and many other conditions governing the infection of the individual must be recognized and accorded their full worth. The essential fact remains, however, that without the inoculation of the bacillus tuberculosis we can not have consumption, or any form of tubercular disease; and if by any means we can exclude this infective agent from the body the individual is safe from the disease.

There are two principal channels of infection in tuberculosis; one is by the digestive tract and the other, far the more important, by the respiratory organs.

Children are especially liable to infection by way of the digestive organs. An infant nursed by a consumptive mother, or one fed on milk from tuberculous cows may become tuberculous if the food contains the infective agent. It has been shown that the milk may contain tubercle bacilli, even though there is no recognizable local tubercular disease of the lacteal glands. It is highly probable that the frequency of tuberculosis of the intestinal canal, the peritoneum, the mesenteric glands and other abdominal organs in the young, is in most cases attributable to direct infection by tuberculous milk. In the adult this avenue of infection is likewise open. Meat from tuberculous animals, or other articles of food accidentally contaminated by the tubercle bacillus, may be the medium of communication. Secondary infection, from swallowing the bacillus-laden sputum from the lungs, is also not infrequent.

I need hardly say, however, that in the great majority of cases of tuberculosis the infection takes place by way of the respiratory organs, which also become the principal and generally the only, seat of the disease.

It is held by some, and I am inclined to consider the belief well founded, that the tubercle bacillus can not effect a lodgment in the tissues and begin its destructive action, unless these are weakened in their resistive power by an inherited defective organization, or by acquired conditions of lowered vitality. It is a result of clinical observation that a catarrhal pneumonia, for example, is often a forerunner of pulmonary consumption. It is assumed, with good reason, that the anatomical elements of the lining

membranes of the inflamed air-cells and finer bronchial tubes succumb to the attacks of the invading germ, carried in the inspired air, while in a state of health the tissues could resist the destroying organism. This simply emphasizes the importance of avoiding any factors tending to depress the vital condition of the organism or any of its parts.

The tubercle bacillus does not multiply under ordinary conditions outside of the body, and the fully developed organism when removed from the conditions favoring its growth in the body soon loses its vitality. But the spores of the bacillus, or the germs of the germ, as one may say, are extremely resistant and retain their power of growth and development for a considerable period. The dried spores are thus always potential sources of mischief if accidentally taken into the system by inhalation or swallowing. They may also be inoculated in wounds or traumatisms, but this mode of infection is comparatively rare, and may be left out of account in the present discussion.

Careful investigations by Baer and Cornet have shown that the death-rate from consumption is four times as great in German prisons as among the free population of the same age. In convents, asylums, and similar institutions, tubercular diseases are also extremely prevalent. In the Maryland Hospital for the Insane, over 30 per cent. of the deaths are due to tuberculosis. I am confident that within the last two years at least three patients contracted the disease by infection in the wards. Efforts have been recently made to minimize this danger.

Dr. Lawrence F. Flick has shown by a patient and laborious study of the cause of death in the fifth ward in the city of Philadelphia, that certain houses in that ward are infected. He found that for a period of twenty-five years, from 1863 to 1887, all the deaths from tuberculosis in the ward occurred in less than one-third of the houses, while in 1888 over one-half of the tubercular deaths occurred in these same houses, demonstrating beyond a doubt that these houses were infected.

I can hardly think it necessary to adduce proof that the tubercle bacillus is in all cases of tuberculosis the active agent of the infection. Recent investigations, especially those of Cornet, have shown the manner in which infection occurs. The breath of consumptives contains no bacilli, and is not infective. Even when the lungs are full of broken down tissue swarming with bacilli, the latter are only in the rarest instances, if at all, exhaled in the breath. During a fit of coughing, small particles of pus and secretion containing bacilli may be carried along in the forcible expulsion of air from the lungs, but even this is probably rare. Ordinarily the air of rooms or of hospital wards occupied by consumptives is free from bacilli and may be breathed with impunity. It is only when the dust of the room, containing dried and pulverized sputa, is disturbed by sweeping, or shaking up the bed-clothing, or in other ways, that danger of infection occurs. Scrapings from the walls of rooms occupied by consumptives, inoculated into animals, produced tuberculosis in 20 per cent. of the latter. Control experiments showed that dust from the walls of houses, hospital wards and public buildings not inhabited by tuberculous patients was not infective. Cornet showed also that the dust from the walls was in no case infectious when sputum cups were used to receive all expectorated matter, although such expectoration was full of bacilli. Praussnitz has demonstrated the presence of tubercle bacilli in the scrapings from the interior of railway carriages on one of the German railway lines carrying many consumptive passengers. Thus is experimentally demonstrated a danger to which attention had previously been forcibly drawn by Whittaker, Gihon and others.

It is generally agreed among physicians that if the stools from a case of typhoid fever are disinfected before being thrown out where they may contaminate the drinking-water supply, there is little, if any, danger from further infection. The alvine excreta being recognized as containing the infective agent, the destruction of the latter renders the material innocuous. In like manner it may be accepted as demonstrated by recent researches that if the sputa of a case of consumption be disinfected as soon as expectorated, the consumptive patient is no longer a source of danger to his neighbor.

From the foregoing it becomes evident that the principal measures of prophylaxis against tuberculosis must be such as comprise, first, immediate destruction of the bacillus tuberculosis in the sputa, or in other excretions when the case is not a pulmonary one; second, the disinfection of clothing and bedding, or other furniture liable to be contaminated with the infective material. As accessory measures must be considered notification to the health authorities of all cases of consumption, public disinfection of infected houses and conveyances (ships, railway cars), and the establishment of special hospitals for the free treatment of indigent consumptives.

The first example of an attempt at a thoroughgoing restriction of tuberculosis, is the decree of the King of Naples in 1832, before referred to. According to De Renzi, quoted by Flick, this decree contained the following propositions:

1. The physician shall report the consumptive patient, when ulceration of the lungs has been established, under penalty for the first offense of 300 ducats, and upon repetition, of banishment for ten years.

2. An inventory shall be made by the authorities of the clothing in the patient's room, to be identified after his death, and if any opposition shall be made, the person doing so, if he belongs to the lower class, shall have three years in the galleys or in prison; if to the nobility, three years in the castle and a penalty of 300 ducats.

3. Household goods which are not susceptible shall be immediately cleansed, and those that are susceptible shall at once be burned or destroyed.

4. The authorities themselves shall tear out and re-plaster the house, alter it from cellar to garret, carry away and burn the doors and wooden windows and put in new ones.

5. The sick poor shall at once be removed to a hospital.

6. Newly built houses can not be inhabited before one year from their completion, and six months after plastering has been finished and repairing has been done.

7. Superintendents of hospitals must keep in separate places clothing and bedding for the use of consumptives. Other severe penalties are threatened to those who buy or sell objects which have been used by consumptives, to servants, members of the family, and to any transgressors whomsoever.

The discovery of the bacillus tuberculosis and its mode of propagation and transmission would almost seem to justify these harsh regulations. Indeed, their enforcement appears to have produced a marked reduction in tuberculous diseases. Dr. Flick, who has made a very thorough study of this question, estimates that in 1782 the mortality from tuberculous diseases in the Kingdom of Naples was ten per thousand of population. In 1887 the official statistics for the Italian States formerly comprised under the Neapolitan Kingdom showed that the death-rate from all forms of tuberculosis was only 2.05 per thousand living people.

The efficient carrying out of restrictive measures against consumption requires intelligent coöperation on the part of the public. Hence, the education of the laity upon the infectious nature of tuberculosis and the importance of individual measures of prophylaxis must precede any successful enforcement of legal enactments looking toward the restriction of the disease. There can be no doubt that the public press can give most effective aid in spreading such knowledge. The newspapers are always foremost in the dissemination of useful information. The press is the most powerful auxiliary of the sanitarian. The press makes public opinion. Public opinion makes laws, and until laws have the sanction of public opinion, it is futile to look for their successful enforcement.

Popular societies, like the French "Ligue prèventive contre la phthisie pulmonaire," and the "Pennsylvania Society for the Prevention of Tuberculosis," are also useful and effective agencies in educating the people upon this subject. The organization of similar societies should be encouraged elsewhere.

Our current knowledge of tuberculosis and its means of prevention was effectively summed up in a report made to the New York City Health Department in the early part of 1889, by Drs. T. M. Prudden, H. M. Biggs, and H. P. Loomis, the pathologists of the department, and extensively published. In 1890, the Prussian Government issued a set of regulations which admirably cover the whole subject. This action was followed by the Kingdom of Wurtemberg in 1892. In the same year the State Board of Health of Michigan issued a pamphlet giving instructions for the disinfection of sputa, and in 1893 the same Board went a step further and adopted a resolution requiring consumption of the lungs and other tubercular diseases to be reported among "the diseases dangerous to the public health," this report to be made by householders and physicians to the local health officer as soon as the disease is recognized. The purpose of such report is to secure to the health officer information of the location of each case, "with the view of placing in the hands of the patient reliable information how to avoid re-infecting himself or herself, or giving the disease to others, and in the hands of those most endangered, information how to avoid contracting the disease."

The publication of the report of Drs. Prudden, Biggs and Loomis seems to have been the first official notification to the public by any health authority of the infectiousness and preventability of tuberculosis, since the Neopolitan decree before quoted. Within a few months the New York Health Department has taken a more aggressive step, and now requires all public institutions, such as asylums, homes, dispensaries, etc., to transmit to the Board of Health the names and addresses of all persons suffering from pulmonary tuberculosis within seven days of the time when such persons first come under observation." Physicians are requested to notify the Board of all cases coming under their professional care. Hospital authorities are urged to separate consumptive patients from those sick of other diseases. Special inspectors are appointed to visit the residences of consumptives, deliver printed instructions containing methods of prevention, and practice disinfection when required. One of the municipal hospitals is to be set aside as a "Consumptive Hospital" for the exclusive treatment of this disease, and whenever requested by physicians, the Health Department will undertake the bacteriological examination of the sputum in doubtful cases.

Action in a similar direction was contemplated by the Board of Health of Philadelphia, but objection on the part of some physicians to the compulsory notification of the disease was so strong that it has been for the time abandoned.

Within two months the State Board of Health of Washington has placed consumption among the diseases required to be reported to the Board.

The Board of Health of the City of Baltimore is about issuing a circular to the public giving suggestions in reference to preventive measures against tuberculosis.

The Pan-American Medical Congress, in session in Washington last September, adopted resolutions recommending to the various National Governments represented, effective measures for the restriction of the disease, and the American Public Health Association, which has been studying the question for the past four years through a special committee, set its stamp of approval upon the work of the committee by the adoption of the following report and recommendations in Chicago last October:

1. "Tuberculosis has been conclusively demonstrated to be contagious by bacteriological experiments, by clinical observations, and by a study of the history of the disease.

2. "Tuberculosis is a preventable disease. Its preventability follows as a logical sequence upon its contagiousness, but has likewise been demonstrated in practical life.

3. "The contagium of tuberculosis resides entirely and solely in broken down tubercular tissue. A person suffering from tuberculosis, therefore, does not become a source of danger to others until he begins to give off broken-down tubercular tissue, either in the form of sputa from the throat or lungs, diarrheal discharges from the bowels, or matter from a tuberculous sore such as lupus, white swelling, cold abscess, scrofula or tubercular inflammation of a joint.

4. "*A person suffering from tuberculosis can be made entirely harmless to those about him by thorough sterilization of all broken-down tissue immediately upon its being given off. With proper precautions it is therefore possible to live in the closest relation and upon the most intimate terms with consumptives without contracting the disease.*

5. "Tuberculosis is not hereditary. A predisposition to the disease can be transmitted from parent to offspring, but this is more true of tuberculosis than it is of all other contagious diseases.

6. "A predisposition to tuberculosis can be created anew by malnutrition or by anything which depresses the nervous system.

7. "Tuberculosis affects animals as well as man, and is identically the same disease in both. In domestic life, human beings and animals mutually infect each other.

8. "The media through which human beings are ordinarily infected by animals are milk and meat.

9. "Houses in which consumptives have lived and in which immediate sterilization of all broken-down tissue has not been practiced, are infected houses and are liable to convey the disease to subsequent occupants.

10. "Spitting upon floors and into handkerchiefs, and permitting the broken-down tissue to dry and become pulverized, is a prolific cause of spreading tuberculosis.

11. "Temporary occupation of hotel rooms, sleeping-car berths and steamer cabins by consumptives in the infectious stage can infect them so as to convey the disease to subsequent occupants unless proper precautions are taken against contamination of the bedding, furniture and walls with broken-down tubercular tissue."

We recommend the following practical measures for the prevention of the disease:

1. "The notification and registration by health authorities of all cases of tuberculosis which have arrived at the infectious stage.

2. "The thorough disinfection of all houses in which tuberculosis has occurred, and the recording of such action in an open record.

3. "The establishment of special hospitals for the prevention of tuberculosis.

4. "The organization of societies for the prevention of tuberculosis.

5. "Government inspection of dairies and slaughter houses, and the extermination of tuberculosis among dairy cattle.

6. "Appropriate legislation against spitting into places where the sputum is liable to infect others, and against the sale or donation of objects which have been in use by consumptives unless they have been thoroughly been disinfected.

7. "Compulsory disinfection of hotel rooms, sleeping-car berths and steamer cabins which have been occupied by consumptives before other persons are allowed to occupy them."

The City of London Hospital for Diseases of the Chest, and the North London Hospital for Consumption, the Royal National Hospital for Consumption, the National Sanitarium, the Manchester Hospital for Consumption and the Victoria Dispensary for Consumption, issue instructions to be observed by their patients to prevent spreading the disease. These all comprise the use of spit cups, disinfected cuspidors, the prohibition of expectorating on the floor indoors, or on the ground out of doors, and the avoidance of swallowing the sputa to prevent reinfection.

In the various sanatoria for tuberculosis in Germany and in many in this country similar instructions are issued. Some progressive private practitioners in this country have cards printed containing concise instructions for the disinfection of sputa, and other measures to prevent the further spread of the disease.

The various practicable measures for the restriction of tuberculosis may be summed up as follows:

1. Notification to the health authorities of all cases of tuberculosis, more especially of tuberculosis of the lungs. This report should be made by the physician who becomes cognizant of the case in the line of his professional duty, and by the householder himself. In order to reach all cases, such notification should be compulsory. While it is probable that some cases would escape report through the negligence or wilful disregard of the medical attendant, these would be few and would diminish as soon as the benefits accruing from attention to this regulation became apparent.

2. All public institutions, as hospitals, prisons, schools, asylums, etc., should be required to promptly report through their managers or executive officials, under penalty, all cases of tuberculosis occurring in such institutions.

3. Upon the recovery, death or removal of a consumptive from one house or apartment to another, notice should be given by the patient or his guardian, the householder or the physician, to the health authorities in order that appropriate measures of disinfection of the vacated premises may be taken.

4. Concise instructions for the guidance of patients with pulmonary consumption, or persons coming into frequent contact with them, should be furnished free of charge by the health authorities, upon notification of a case, or at the request of any person interested. These instructions should cover especially the means for destroying or rendering innocuous the sputa. *The isolation of patients is not necessary; when the material containing the tubercle bacilli—in these cases the sputa—is destroyed, the consumptive is no longer dangerous to his most intimate associates.*

5. The health authorities should be empowered to employ special inspectors to visit all cases of consumption reported, instruct the patients themselves and the family, or those brought closely and constantly in contact with them in the best means of avoiding self-infection and the communication of the disease to others, and to disinfect the apartments occupied by the consumptive if found necessary. It may be objected that this will interfere too much with the rights and privileges of the attending physician, but the latter would doubtless often be willing to be relieved of the tedious details necessary. There could, of course, be no objection to the attending physician performing these duties himself, provided they were thoroughly done.

Neither the inspector nor any other officer of the health department should be allowed to comment on the physician's treatment or to offer any suggestions in this particular. I believe it will be generally conceded that sanitary officials conduct themselves with tact and discretion in their relations with physicians.

6. Municipalities should be urged to establish special hospitals for the treatment of indigent consumptives. General hospitals should provide special wards for patients with this disease, and enforce in them the proper measures for the limitation of infection.

7. Railway and steamship companies should be required to change and disinfect all bed linen and other materials liable to infection from consumptive travelers.[1] Dr Albert L. Gihon, in an address before the Pan-American Medical Congress, has graphically referred to the danger in steamship travel with con-

[1] It is reported that on one of the Hungarian railway lines, special railway cars will be furnished for consumptives. These will be renovated and disinfected after each trip.

sumptives, and Dr. J. T. Whittaker has pointed out the many sources of possible infection in the Pullman car.

Such are, in outline, some facts and suggestions that I have thought not inappropriate to present to you on this occasion. The facts are vouched for by leading investigators, physicians and sanitarians. The suggestions are legitimate deductions from the facts recorded. No one who studies the question without prejudice can resist the conviction that tuberculosis, "the great white plague" is a preventable disease; that by concerted action on the part of physicians, sanitary authorities and the public, it can be stamped out among all civilized peoples; that, like leprosy and the black death, it should be of interest in the future merely to the historian of human progress.

CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

BY ROBERT REYBURN, A.M., M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY MEDICAL DEPARTMENT HOWARD UNIVERSITY, WASHINGTON, D. C., AND ONE OF THE ATTENDING SURGEONS IN THE CASE OF PRESIDENT GARFIELD.

(*Concluded from page 624*).

September 17, 8:30 A.M. Temperature 99.8; pulse 108; respirations 21. September 17, 12 M. Temperature 102.2; pulse 120; respirations 24. September 17, 5:30 P.M. Temperature 98; pulse 102; respirations 24. Up to midnight last night the condition of the President had not improved. At 11 P.M. his pulse was 130 per minute, and it varied from 116 to 130 during the night. At about 3 A.M. he fell asleep and slept until 6 A.M. When he awoke his pulse had receded to 106, and his temperature to 98 (F). His temperature during the night did not vary much from the normal point. He slept fairly well in the night taking nourishment at proper intervals. At 11:30 A.M. he had a severe chill lasting about half an hour, and his pulse ran up to 137, followed by perspiration. After 12 M. the temperature gradually fell with diminished frequency of pulse and respiration, so that they were nearly normal by 6 P.M. He slept most of the afternoon, and took liquid nourishment. The paroxysms of coughing were less frequent than usual. During a lucid interval last night the President called Dr. Agnew to him and said: "Doctor, am I not critically ill?" "Your condition is critical," was the frank response, "I thought so," rejoined the President. At the time when the President was attacked with the chill, he complained of very severe pain in the anterior mediastinum; this pain recurred at intervals of six or seven hours until the President's death. This pain is now believed to have been due to the rupture of the aneurismal sac developed on the splenic artery, as show by the postmortem.

September 18, 8:30 A.M. Temperature 98; pulse 102; respirations 18. September 18, 11 A.M. Temperature 100; pulse 116; respirations 20. September 18, 5:30 P.M. Temperature 98.4; pulse 102; respirations 20.

There was no perceptible febrile rise in the temperature of the President during the night, the pulse ranging from 102 to 112 per minute. The cough was less troublesome than on previous nights, and the expectoration is unchanged. He was able to take the nourishment and stimulants required, without gastric disturbance, and there was no evidence of mental aberration during the night. This morning his temperature was six-tenths of a degree (F.) below the normal point, and he was immediately sponged with hot alcohol and wrapped in hot blankets. Enemata containing defibrinated beef blood and stimulants have been administered to him to bring about reaction.

September 18, 6 P.M. The President though quite weak has passed a very quiet day. There has been no recurrence of chill or mental disturbance during the day. At 9 A.M. a slight febrile rise took place which began to subside at 11 A.M.

September 18. To-day the President called Colonel Rockwell to him and said: "Do you think my name will have a place in human history?" The Colonel answered: "Yes, a grand one, but a grander one in human hearts. You must not talk in that way. You have a great work yet to perform." After a moment's silence he said, sadly and solemnly: "No, my work is done."

September 19, 8 A.M. Temperature 98.8; pulse 106; respirations 22. September 19, 12:30 P.M. Temperature 98.2; pulse 104; respirations 20. September 19, 6 P.M. Temperature 98.4; pulse 102; respirations 18.

The President's condition continues to be very unfavorable, and the end is evidently approaching fast. Shortly after the issue of last evening's bulletin, he had a chill lasting fifteen minutes. The febrile rise which followed lasted until midnight, during which time his pulse ranged from 112 to 130 per minute. The sweating which followed was quite profuse. The cough which was troublesome during the chill gave him little annoyance during the remainder of the night. At 8:30 A.M. another chill came on, on account of which the dressing of the wound was temporarily postponed. He slept most of the morning, coughing but little and with more ease.

September 19, 11:30 P.M. After the evening bulletin was issued at 5:30 P.M. the condition of the President remained about the same as during the afternoon, the pulse varying from 100 to 106 per minute, and with rather increased force and volume. After taking nourishment he fell into a quiet sleep. About thirty-five minutes before his death, and while he was asleep, his pulse rose to 120.

September 19, at 10 P.M. General Swaim who was watching in the room with the President heard him gasp, and make an effort to speak. He at once arose and came to his bedside. He stood there for a few moments looking at him as he apparently lay asleep. The President opening his eyes saw and recognized him and said: "Well, Swaim," and then immediately afterward, "Oh my! Swaim, what a pain I have right here," putting his hand to his heart. General Swaim leaned over and felt his pulse, and then finding himself unable to count its beats, sent instantly for Dr. Bliss, who was in the next room. It required but a glance to see what was coming. Death was at hand. Dr. Bliss sent immediately for Drs. Agnew and Hamilton, and called Mrs. Garfield, who was in the adjoining room. Within half a minute Mrs. Garfield entered the sick chamber. Nothing was said but the one question she addressed to Dr. Bliss, "Is there no hope?" "Madame," replied the Doctor gravely, "he is dying."

By this time Mrs. Rockwell and Miss Rockwell,

Entered according to Act of Congress, May 29, 1893, by ROBERT REYBURN, M.D.

Miss Garfield, Private Secretary Brown, Colonel Rockwell and Dr. Agnew had entered the room. Mr. John Ricard, Mr. H. L. Atchinson and the four attendants were also present. The President was quite unconscious. His eyes were half closed, and the balls of them turned upwards, so that the lines of white showed between the half-opened lids. There was no sound in the sick room except his breathing, which at times was loud and stertorous, and then again could scarcely be heard. It was not many minutes (at 10:35 P.M.) before the life went out so gradually that it was hardly manifest when he was dead. When the limbs had assumed that eternal rigor which only decay can change, Dr. Bliss tried to feel the pulse, and endeavored in vain to hear the heart beats, and then said in a half whisper, "It is over."

V.

THE CAUSES OF THE DEATH OF PRESIDENT GARFIELD.

It is surprising, considering the large amount of medical literature in existence devoted to the case of President Garfield, to find so many members of our profession having very vague ideas concerning the cause of his death.

The immediate cause of his death was the spontaneous rupture of a traumatic aneurism formed on the splenic artery, probably as the result of the abrasion of the outer coats of this blood vessel by the bullet at the time of the shooting. This was a complication that could neither be foreseen or prevented, nor could it have been relieved by any exertion of surgical or medical skill on the part of his surgeons. The proximate cause of his death (and one that would have inevitably soon terminated his life even had the bursting of the aneurism not taken place) was the profound condition of septic poisoning (septicemia) which existed in the case of the President for a considerable time previous to his death. The initial point of this septic condition probably dates as far back as the period of the first chill (July 23), and though there were apparent symptoms of convalescence at various times, yet the course of this septic infection was practically continuous, and could only result in inevitable death. This brings up the grave and momentous question for consideration viz: Could this septic condition in the President have been prevented by a different method of treatment on the part of his surgeons? It is useless for me to tell how many weary days and wakeful nights I have spent in arguing with myself the various and opposing arguments on either side of this question. In order to give a calm and unbiased judgment in this matter, let us go back a little and study the course of the missile in the body of the President with the nature of the injury produced by it.

The bullet from the pistol of the assassin entered his body in a horizontal and slightly downward direction immediately over the eleventh rib about three and one-half inches to the right of the vertebral spine. Its course was deflected downward and somewhat to the left, and then it passed to the left, fracturing the eleventh rib; then it fractured the twelfth rib at a point slightly more to the left than the fracture of the eleventh took place, being still more deflected to the left by the rounded and curved surface of the twelfth rib. It then entered the upper part of the right side of the body of the first lumbar vertebra, involving the inter-vertebral cartilage of the vertebra above (twelfth dorsal) in its course. The bullet emerged from the left side of the body of the first lumbar vertebra at a lower

Fig. 1.—Lateral view (right side) of bodies and spinous processes of twelfth dorsal and first and second lumbar vertebræ of President Garfield, showing wound of entrance in body of first lumbar vertebra.

Fig. 2.—Anterior surfaces of twelfth dorsal and first and second lumbar vertebræ of President Garfield, showing fractured twelfth rib and wound of exit.

point down than its point of entrance, and continuing its course to the left with diminishing velocity, passed behind the pancreas to a point just below its lower surface where it was found at the time of the

postmortem examination. The course of the bullet was wholly without the peritoneal cavity.

As will be seen by the engraving, the course of the missile after it entered the body of the President followed the line of an irregular, nearly S-shaped curve with its convex surface directed to the back of the President, and passing to the left and gradually downward to its termination. A consideration of this fact will show at once how impossible it was to obtain any information concerning the course of the bullet, or its location in the body by any examination made from the outside of the body. No probe could be passed through the wound in the body of the vertebra, (even if it had been considered advisable to attempt such a proceeding), and the purulent material formed in the wound as the result of bacterial action, gradually by the action of gravity dissected its way downward toward the right iliac fossa, and formed a false channel or sinus, which misled the surgeons, and made them suppose the bullet lay in

FIG. 3.—Oblique view of twelfth dorsal and first and second lumbar vertebræ of President Garfield, showing wound of entrance and point of exit and carious condition of bodies of first lumbar and twelfth dorsal vertebræ. (The probe has been passed from above and somewhat downwards through wounds of entrance and exit).

that part of the body. The carious condition of the body of the first lumbar vertebra found to exist at the time of the postmortem was quite sufficient to account for the septic condition of the President during life. It may here be remarked that the spinal canal of the first lumbar vertebra was not opened by the bullet in its course through the body, nor were there any gross anatomical lesions found in the spinal cord at the time it was examined. It should be remembered, however, that the weapon with which the President was shot was an English revolver of what is commonly called the "bulldog pattern," that was capable of throwing a bullet with great propulsive force; and crushed and splintered the porous cancellated bony tissue in its passage through the body of the vertebra.

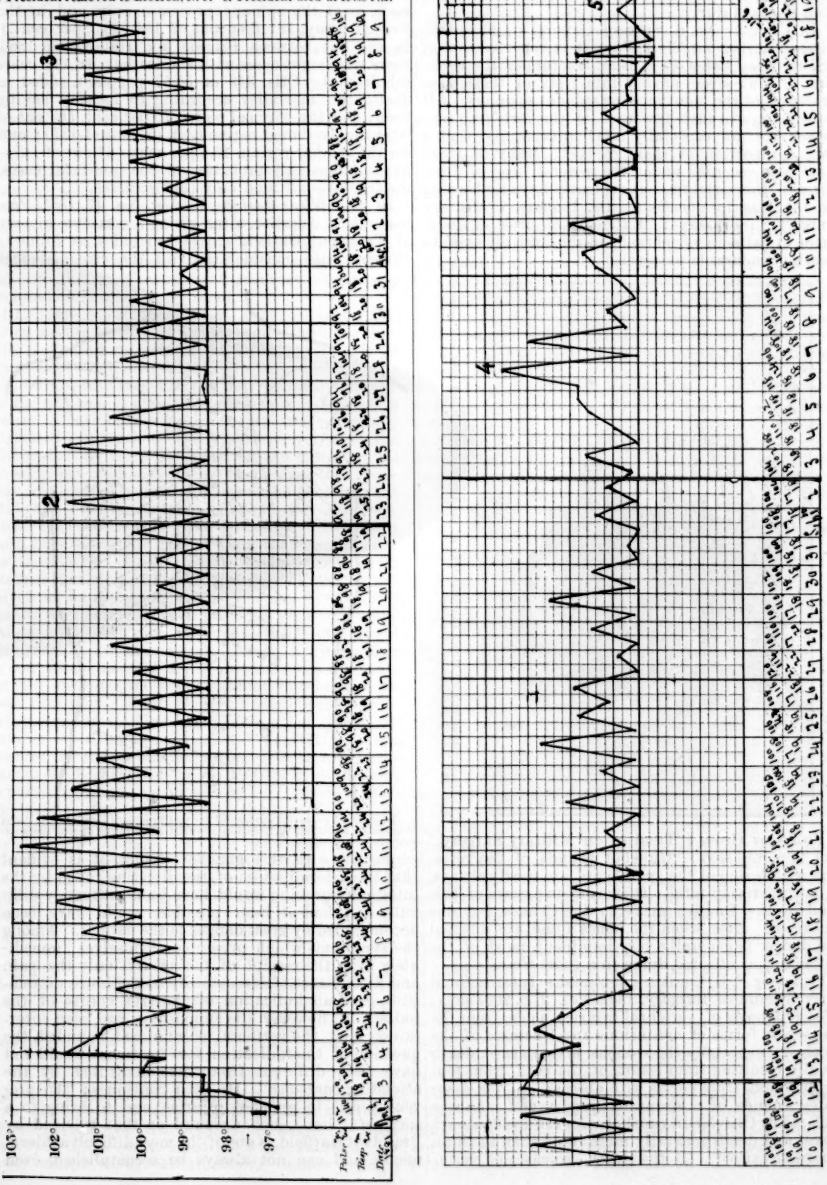
The lacerated condition of the cancellated structure of the first lumbar vertebra doubtless contributed largely to the production of the septicemic condition, which was in no wise due to lack of proper or sufficient drainage. More favorable circumstances for its production than existed in the comminuted and softened cancellous tissue, with its open venous sinuses bathed in ichorous pus could scarcely be imagined. Dr. William White (Review of some of the more important surgical problems of President Garfield's Case, p. 15, 1882): "The fact that drainage was thorough and complete, and that no portion of the unfavorable symptoms was due to failure in this respect, was fully established by the absence of purulent collections, either along the track of the ball or in the passage caused by the burrowing of the pus. There was no time previous to the first operation (July 24) at which the accumulated pus did not pass freely out of the original wound. Its exit was favored by gravitation after the two incisions had been made, which

FIG. 4.—Antero posterior section of bodies and spinous processes of twelfth dorsal and first and second lumbar vertebræ of President Garfield, showing carious condition of the bodies of twelfth dorsal and first lumbar vertebræ.

brought the external openings to a lower level, and enabled them not only to drain the lumbar and iliac regions, but also to carry away any discharge that might have come from the fractured vertebra." Antiseptic treatment was employed throughout the case as carefully as it was possible to do so, and drainage tubes were used until it was evident that their use was unnecessary."

In attempting to reply to the above mentioned questions, much time and labor have been spent in reviewing the various authorities on this subject. The consensus of opinion of all the great masters of the art of surgery is to the effect that these injuries are almost necessarily fatal. Dr. Lidell, justly esteemed as one of our most experienced of American military surgeons, says (*American Journal of the Medical Sciences*, Vol. 48, p. 317): "Leaving out of the calculation such fractures as involve the spinous processes

Chart of the temperature, pulse and respiration of President Garfield from July 2, 1881 to September 19, 1881. By Robert Reyburn, M.D.
1. Period of profound shock and internal hemorrhage. 2. First rigor (septic infection). 3. Opening made to drain the President's wound. 4. President removed to Elberon, N. J. 5. President died at 10:35 P.M.



alone, the writer has never seen a case of gunshot fracture get well, and he might add that he has never seen life prolonged for a month after the infliction of that injury."

In Circular No. 6, Surgeon-General's Office, 1865 (issued during our Civil War), it is reported that of 187 recorded cases of gunshot fracture of the vertebræ, all but seven proved fatal; six of these were fractures of the transverse or spinous apophyses. It is well known that fractures of the vertebral processes are not especially fatal injuries, and that a large proportion of them recover. Many of these have been recorded under the general head of fractures of the vertebræ, but evidently have no bearing on the case in question. Dr. Demme, ("Military Surgery," 1868) says: "Extensive injuries or lodgment of balls in vertebræ or in the cord give rise to death or incurable paralysis."

Fig. 5.—Oblique view (from the left side) of the twelfth dorsal and first and second lumbar vertebræ of President Garfield.

Professor Gross ("Treatise on Military Surgery," Vol. 2, p. 82) says: "Gunshot wounds of the vertebræ, with lesion of the spinal cord, are nearly always, if not invariably fatal. Of twenty-two cases of this kind in the English army in the Crimea, not one recovered. Even when the bones alone are affected the danger is generally very imminent, most of the patients thus affected dying in a short time."

Professor P. S. Connor (Ashhurst's International Encyclopedia of Surgery, 1882, Vol. 2, p. 203) says: "The prognosis of vertebral injuries, aside from the less severe forms of contusions and fractures of the processes, especially the spinous, is very grave, death usually resulting from lesion of the cord, from septic infection, from caries with abscess, or from associated wounds of a viscus or large vessel. As was declared by Ollivier, in gunshot cases the accidents are graver and death generally more rapid than in those otherwise caused. Of the thirty-two cases of vertebral fracture among the British soldiers in the Crimea, all proved fatal except four, which were either fractures of the transverse processes in the neck, or of the spinous processes only, and in the French army, 181 died out of 194 (93.3 per cent.). In the war between Prussia and Hanover in 1866, there were eight cases with six deaths. Of 628 cases tabulated by Otis, 349 or 55.57 per cent. ended in death, the mortality according to locality having been: For the cervical region 70 per cent. (63 out of 90); for the dorsal region 63.5, (87 out of 137); and for the lumbar region, 45.5 per cent. (66 out of 145); but in almost all probably, of the non-fatal cases, the fractures affected only the processes."

In the *Wien Medicin Wochen*, No. 47, 1881, Professor Max Schuller, after giving a complete history of President Garfield's case concludes as follows: "Taking into consideration all the circumstances

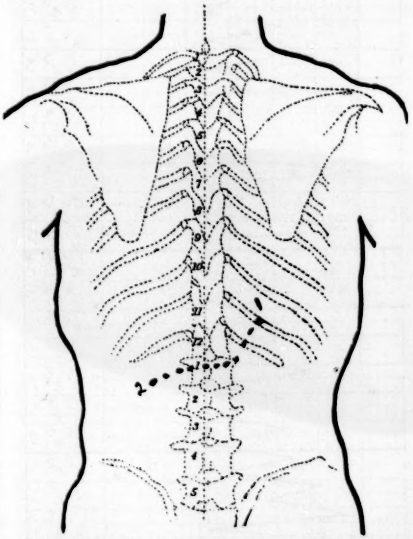


Diagram of posterior surface of body of President Garfield. 1. Point of entrance of bullet. 2. Location of bullet when found during the post-mortem examination.

connected with this gunshot wound, it is evident that the determination of the direction taken by the missile by probing would have been extremely difficult, and had it been possible, would have been accompanied by great danger to the patient. Among the symptoms which presented themselves immediately after the receipt of the injury, only the pain and disturbance of insensibility in the lower extremities, gave an indication of the true course of the bullet. If, however, the supposition had been entertained that the vertebral column was wounded, the question of the indication for treatment would not have been different from that instituted by the attending surgeons." He then continues: "To prevent sepsis in gunshot injuries, and to bring to a successful issue such a wound as that received by President Garfield, is one of the most difficult achievements, and can not always be accomplished, even

with the most careful and assiduous application of aseptic surgery."

Dr. John Ashhurst (*North American Review*, December, 1881, p. 594) says: "Looking at the whole case from beginning to end, I do not see that the treatment could have been altered in any way to the advantage of the illustrious patient; nothing was done that should have been omitted, and nothing was left undone that could possibly have been of benefit."

Dr. J. Marion Sims (*North American Review*, December, 1881, p. 300) says: "The President's surgeons did all that men could do, all that the present state of science would permit, and all that could have been done, even if they had first ascertained the course and direction of the ball." "Our whole medical literature does not contain a single well authenticated case of recovery from such a wound." "He had not the least chance of recovery under any circumstances or any treatment."

Dr. John T. Hodgen (Ibid, p. 610) says: "In reviewing the history of the case of President Garfield, I can find no reason for adverse criticism of any part of the management."

Finally, while it is difficult and perhaps impossible for any one to give a dispassionate judgment, in a case in which we were so deeply and personally interested as in that of the President, yet it is the deliberate conviction of the writer (as it was of all the surgeons in charge of the case) that the President was mortally wounded when he received the fatal shot. Freely confessing our errors of diagnosis, yet we believed that no different course of treatment could have saved his life. I know that I speak only the truth when I say that no wounded man ever received more tender, loving and devoted service, not only from his surgeons but also from the faithful friends who nursed him through his long and weary illness. We gave him this cheerfully and would have sacrificed even our lives for him, if by so doing we could have saved his. We would have done this not only because he was President, but because we loved the man. Poor patient, uncomplaining, suffering President. How our hearts ached for him; Member of Congress, Senator, President, stricken down at the time when he had received in rapid succession the highest honors his country could bestow, he passed through days, weeks and months of suffering, through the valley of the shadow of death, to that heavenly country, where there is neither sorrow, nor suffering nor pain. We can not understand why such things should be. We can only bow in humble submission to the will of Him who ruleth all things both in heaven and earth, and who doeth all things, well.

THE END.

A NEW APPARATUS FOR ADMINISTERING ANESTHETICS.

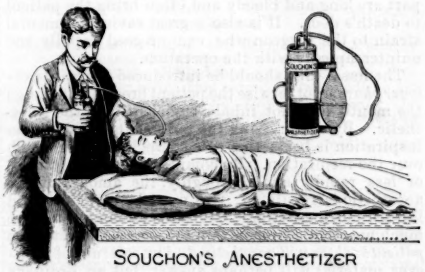
BY EDMOND SOUCHON, M.D.

PROFESSOR OF ANATOMY AND CLINICAL SURGERY, TULANE UNIVERSITY, NEW ORLEANS, LA.

THE ANESTHETIZER.

This new apparatus has for its object *to force the vapor alone* of anesthetics into the pharynx through a tube passed into the nose or mouth, or to force the vapor into a cone. I call this apparatus by the newly coined word, "anesthetizer," because such a device requires really a new word to express its mode of action, which is active since the vapor is *forced* out of the receptacle into the patient by an agent which is outside of the patient, who is himself passive; whereas inhalers are passive and require the exposure to the air of the anesthetic for their proper working, and require also an active coöperation from the patient.

The apparatus consists of a receptacle or bottle of suitable size with a stopper traversed by two tubes, an inlet and an outlet tube, *neither of which dips into the liquid anesthetic, but both stop close to the stopper.* The two tubes are of the same diameter throughout and at both extremities, about one-quarter of an inch more or less. Stop cocks may be fitted to them to prevent the spilling or the evaporation of the anesthetic when the apparatus is not used. The inlet tube is connected with a compressible bulb which is fixed at *both ends* to the receptacle by a simple metallic frame, so that the apparatus can be readily held and worked with one hand, leaving the other hand free to take care of the pulse. A ring adapted to the frame on the side opposite to the bulb, and through which a finger is passed, assists in the working. A hook with or without a chain may be adapted to the frame so as to hook the apparatus to the vest or coat, as is used in some inhalers. The outlet tube from the stopper is provided with a rubber tube of suitable length which is connected with a cone, or is introduced through the nose or through the mouth, into the pharynx.



SOUCHON'S ANESTHETIZER

The receptacle or bottle is filled or emptied by simply removing the cork.

To guard against any possibility of forcing the liquid anesthetic through the outlet tube, and also to guard against any spilling, so as to enable the anesthetist to lay the bottle on the bed or table without any apprehensions as to the consequences, it may be well to fill loosely the bottle with sufficient absorbent cotton to imbibe and hold the anesthetic; a sponge or any absorbent material will do as well. This, however, *may* diminish somewhat the strength or quantity of the vapor at each pressure of the bulb. After the operation is over the anesthetic unused keeps in the bottle and cotton as well as in a separate bottle, provided the tubes are disconnected and the holes plugged tightly.

The bulb is detachable and can be renewed whenever this becomes necessary.

The advantages of this apparatus over inhalers of a more or less similar kind, consist: 1, in that neither the inlet or the outlet tubes dip down into the liquid anesthetic or come near to it, thus preventing the *liquid anesthetic* from being driven into the outlet

tube, thence into the face or pharynx; 2, the absorbent cotton prevents also against this same accident and against the spilling of the anesthetic when the bottle is laid on the side or inverted; 3, in the fixation of the bulb at *both ends*, making the fastening of the bulb more secure and the bulb more easy to work with the same hand that holds the apparatus; 4, the ring which assists in holding it; 5, its small size, about five inches in height by two in diameter; 6, its cheapness; 7, the facility with which one can be constructed *ad hoc*; 8, the thorough manner in which it does its work; 9, the impossibility of its getting out of order.

TUBO-NASAL ANESTHESIA.

Without such an efficient and simple apparatus it is impossible to make a *daily practical success* of maintaining the anesthesia through the nose or mouth in all operations on the face or its orifices, when otherwise the cone or wire mask has to be removed every few minutes to uncover the field of the operation to enable the operator to proceed with the operation. Soon after the inhaler is removed, the patient recovers from the effects of the anesthetic and the operator has to stop operating to allow the cone or mask to be applied over the face. With this anesthetizer, anesthesia is maintained uninterruptedly.

It is a great saving of time, pain, bleeding and shock to the patient, thereby contributing materially to the saving of life in operations which for the most part are long and bloody and often bring the patient to death's door. It is also a great saving of mental strain to the surgeon who can proceed rapidly and uninterruptedly with the operation.

The nasal tube should be introduced down into the *lower pharynx*, otherwise the patient breathing through the mouth may not inhale sufficiently of the anesthetic. By compressing the bulb at the onset of an inspiration is best; this rule compels a closer watch over the respiration. By compressing the bulb more or less rapidly and thoroughly, the amount of the anesthetic is regulated; this must be borne in mind lest too much anesthetic be given. It does not require much anesthetic to maintain the anesthesia after the *patient has been well anesthetized*. Any soft tube of whatever material will perhaps answer, but an ordinary soft red rubber catheter is the best, and is easily obtainable; this tube should be as large as the nasal cavity will admit. It is also important that all connections should be air-tight for obvious reasons. Care should be taken that no bends or kinks form on any part of the tubes, as this will interfere with the proper working of the apparatus.

The one who administers the anesthetic can place himself in any position where he will be best out of the way of the operator, even at the head of the table or sitting, without interfering with the proper working of the apparatus.

In case of emergency any powder-blower with a bottle will answer. Care should be taken that the long stopper-tube should not dip down into the anesthetic lest too much vapor and liquid be thrown in, even upon moderate pressure of the bulb, unless the absorbent cotton be used. The ends of both tubes *should lie in the vapor only of the upper* part of the bottle. Any atomizer will do also, provided the tube that dips down into the fluid be removed, otherwise the liquid anesthetic will be driven through the outlet tube; cotton may also be used in the bottle or not.

It is easy for any one to construct an apparatus *ad hoc*, out of any bottle of suitable size. The two holes through the cork are quickly burned through with a red hot piece of large wire; any pieces of tubing, glass or metal, or two goose quills can answer; the bulb of a Davidson syringe or any other obtainable bulb may be adapted; it requires little anesthetic to maintain the anesthesia after the patient has been well anesthetized by the ordinary method.

This apparatus was first exhibited in Ward Eight of the Charity Hospital, in connection with a patient upon whom Dr. Matas was operating for cleft palate.

It was employed throughout a whole operation by the author in a case of tumor of the superior maxilla which was operated upon by Dr. A. W. de Roaldes, in the presence of Drs. R. Matas, A. McShane, F. Landfried, P. Delaup and several others. It was the case of a boy 11 years old where a portion of the right superior maxilla had to be gouged for a most interesting case of odontoma. The patient was anesthetized by the ordinary method, but from the moment the operation began, the anesthesia was kept up by the above means, for over an hour, to the thorough satisfaction of all present. The operator did not stop one minute during the operation, until it was completed. The anesthesia was complete all the time. At one time the head had been lowered (Rose's position), and kept in that position quite a long time, without interfering with the administration of the anesthetic. Barely three-quarters of an ounce of chloroform was used.

The apparatus was also used in the amphitheater of the Charity Hospital on a patient from the service of the author (Ward Two). It was the case of a mulatto adult whose chin and lower jaw had been shot off, leaving a large gap which had to be closed by a plastic operation. Dr. Matas was kind enough to operate while the author administered the anesthetic with his apparatus. The operation was performed before the class of Tulane Medical College and of the members of the Polyclinic. The anesthesia lasted one hour and three-quarters with perfect satisfaction. No bad after effects followed in *either* of the two cases. The apparatus was later on used in other cases with equal satisfaction.

BUCCAL TUBO-ANESTHESIA.

Should the operation be on the nose itself, where the tube might be in the way, the tube could be introduced through the mouth into the lower pharynx, care being taken to prevent the tube being bitten, by using a wedge or a gag or by connecting the end of the tube with a metallic tube, or, best, with a disinfected male metallic catheter which the teeth could not mash.

FACIAL TUBO-ANESTHESIA.

The apparatus may also be used to replace the ordinary way of administering anesthetics for operating in general, by pinning the extremity of an outlet or discharging *long* rubber tube to the interior of the apex of a cone, made of a towel of several ply of paper; fasten the cone with strings tied by a bow knot around the head of the patient. Apply the base of the cone close and tight around the nose and mouth so as to exclude the air; enough air is thrown in coming with the bulb from the anesthetic. For that reason the wire mask does not answer well, as it allows too much air. Dr. A. L. Metz, Demonstrator of Practical Chemistry in the Tulane Medical College, says that

there are eight parts of air to one of chloroform forced out of the receptacle at each compression of the bulb. By pressing the bulb properly, anesthesia was duly produced and kept up in the cases where we employed it. There was no burning of the lips and nose. The motions of the head of the patient are unheeded because of the length of the tube and of the fastening of the cone. In case of vomiting, the strings are readily untied and the cone removed.

If the operation is to be on the face or its orifices, the facial process is abandoned as soon as the patient is anesthetized, and the tube is introduced through the nose or mouth into the pharynx as described above.

OBSTETRICAL TUBO-ANESTHESIA.

The apparatus is useful also in administering anesthetics during labor, using a cone and perhaps a longer tube than above described. As soon as a pain is about to commence, the quick compression of the bulb throws in all the vapor needed. The accoucheur has one hand free to make his examinations. He may trust the apparatus to any one present who will press the bulb only when directed by the accoucheur.

The accoucheur is also relieved of the painful position of stooping over the patient to manage the cone and the anesthetic. The patient may safely administer the anesthetic to herself by compressing the bulb herself, since when unconsciousness is produced she can no more work the bulb and take too much anesthetic. There is no danger of spilling the anesthetic, if the absorbent cotton has been properly arranged in the bottle.

SOCIETY PROCEEDINGS.

Georgia State Medical Association.

Abstract of the Proceedings of the Forty-fifth Annual Meeting held in Atlanta, April 18, 19 and 20, 1894.

FIRST DAY—MORNING SESSION.

The Association convened in Concordia Hall, and was called to order by the President, DR. W. H. ELLIOTT, of Savannah, at 10 A.M.

Prayer was offered by REV. I. S. HOPKINS.

An address of welcome was delivered by the HON. N. J. HAMMOND, of Atlanta, and PRESIDENT ELLIOTT responded thereto in behalf of the Association.

DR. J. B. S. HOLMES, of Atlanta, took the chair, and PRESIDENT ELLIOTT delivered his address. He selected for his subject the

DUTY OF THE PHYSICIAN TO HIS PATIENT.

He began by refreshing the memory of the members by not only a recital of the law, but asked attention to some practical applications of its precepts. He quoted largely from the American and English Encyclopedia of Law, and pointed out the obligations the law implies upon the physician. Directing attention to the Code of Medical Ethics of the AMERICAN MEDICAL ASSOCIATION, he said that this Code was formally adopted by the Constitution of the Medical Association of Georgia, and the fact of its membership made it binding upon the members. It was an obligation voluntarily assumed, and therefore they were bound by the highest dictates of honor to faithfully observe its injunctions. He closed by saying that the standard of responsibility was high, but that it should only increase our zeal to attain it. "If we regard our patients as men and brethren, we will, without the restraint of law and code, follow the Golden Rule and do unto others as we would have them do unto us. If we are faithful to this, what is our reward? Not only "the promise of the life that now is," but when the Son of Man, who was our brother here on earth, shall be the King upon his throne of his glory, he will say: "Inasmuch as ye have done it unto one of the least of these, my brethren, ye have done it unto Me."

The address elicited considerable applause throughout its delivery.

The report of the Committee of Arrangements was then read by the Chairman, Dr. Willis F. Westmoreland, of Atlanta.

DR. C. D. HURT, of Atlanta, followed with the report of the Committee on Program.

The reading of papers was then proceeded with, and the first paper was read by DR. W. C. HUMPHRIES, of Acworth, entitled

THE TREATMENT OF PNEUMONIA,

in which he confined himself mostly to the acute lobar variety. The majority of cases with which he comes in contact assume from the beginning the sthenic type and require active or depleting measures. If called to treat the patient in the first stage of the disease he resorts to moderately active catharsis, and an agent that will arouse the dormant secretions and assist nature to eliminate from the system the effete products produced by the disease. For this purpose he finds no better remedy than calomel, and usually prescribes from six to ten grains to an adult in combination with Dover's powders or some preparation of opium and bismuth subnitrate, His next effort is directed to reducing the force and frequency of the heart's action, and for this purpose he has tried several remedies, such as aconite, gelsemium, the coal tar derivatives, etc., but none of them have given so great satisfaction or such uniform results in his hands as veratrum viride. He uses this oftener than any other heart sedative in this disease and it seldom ever fails him. He does not give it to such an extent as to produce nausea, but in small and often repeated doses. With veratrum he combines turpentine in the form of an emulsion. The author then dwelt upon external applications in the treatment of the disease.

DR. O. H. BUFORD, of Cartersville, followed with a paper on the

FLUID EXTRACT OF JABORANDI AS AN ABORTIVE TREATMENT IN PNEUMONIA.

The author thinks that in this drug we have a remedy that in many cases will force a crisis when given early in the congestive stage. He had used it for several years with good effect. After giving fluid extract of jaborandi, he follows it with quinin and stimulants if indicated. The author then reported three cases in which he used this treatment.

DR. T. M. GREENWOOD, of Mineral Bluff, read a paper on the

ABORTIVE TREATMENT OF PNEUMONIA.

He said his mode of treating the disease was to apply a mustard plaster over the entire portion of the lung affected. He usually makes or has them made under his special directions, using the purest brand mixed with water only, letting the plaster remain on the patient for six hours. He next investigates the condition of the bowels, the secretions in general and, if necessary, gives a mercurial. If this does not cause a free evacuation of the bowels, he administers Epsom salts or castor oil. He next prepares a solution of salicylate of soda, containing about sixty grains of soda to an ounce of water, giving one teaspoonful every two or three hours, according to the intensity of the pain and the amount of fever. Expectorants in his hands have done little or no good, generally doing harm, the great objection to this treatment being, when long continued, its rejection by the stomach. He considered this treatment abortive, for in his hands it has either been abortive or curative. A trial of over fifty cases have given varying success without a single death.

DR. C. S. WEBB, of Atlanta, called attention to the fluid extract of ergot to reduce the temperature in the first stage of pneumonia. Ergot is to some extent a heart depressant. It slows the heart and reduces the temperature, and in his opinion is not so dangerous a drug as the fluid extract of jaborandi.

DR. R. R. KIME, of Atlanta, said it was absolutely essential in the treatment of pneumonia to distinguish between the first stage of the affection and that of absorption of the circulation after consolidation had taken place, and adapt the treatment to these conditions, otherwise failures would be made. Bleeding and the use of the coal tar derivatives should have a limited place in the treatment of the disease. It was worse than folly to tax the heart to its utmost capacity by the use of cardiac remedies. But the physician should increase the power of the heart, equalize the circulation in order to get rid of the material in the lung. At

this stage many cases could be tided over the critical period by the hypodermatic use of strychnin.

DR. W. H. DOUGHTY, of Augusta, formulated the treatment of the disease under four heads: 1, give the patient plenty of fresh air; 2, keep him clean; 3, feed him; and 4, come just as near as possible to letting him alone.

DR. WM. O'DANIEL, of Bullard, considered the disease self-limiting and advocated supportive treatment. The patient needs to be supported early; that if the physician waited for any length of time the loss could not be made up.

FIRST DAY—AFTERNOON SESSION.

DR. H. J. WILLIAMS, of Macon, read a paper entitled

A CASE OF SARCOMA OF THE ILIUM FOLLOWING A RAILWAY INJURY.

The patient was 32 years of age, strong and healthy, a trainmaster by occupation. There was a wreck on his division, and it was important that the roadway should be rapidly cleared, and so he went to the scene of the accident. A guide rope was attached by one end to a locomotive and by the other to some part of the wreck, so that the power of the locomotive could be used in removing the obstacle. The patient was standing by this rope, it broke under the strain, he became entangled and was dragged some distance by the engine, striking his right buttock against the corner of a cross-tie. He felt no inconvenience from the accident, except a momentary pain following a contusion near the exit of the great sciatic nerve, and returned to work. A month later he consulted Dr. Williams for a pain in the right buttock. One day while using deep injections the author thought he felt the end of his needle scraping denuded bone. This he mentioned to the patient and then received the first intimation of the injury received at the wreck. From this he constructed a theory that the bone had been injured, and denuded of periosteum was pressing upon the sciatic nerve at the notch in the pelvis. The doctor suggested the possibility of an operation, which at this time was declined. About six weeks or two months later he operated. Beginning his incision as for aneurism of the sciatic artery, at the posterior superior spine of the ilium, it was carried over the top of the larger tumor of the greater trochanter, and the tissues were dissected down to the tumor. It was situated on the flange of the ilium just above the exit of the sciatic nerve and attached to the bone, though unattached to the muscles over it. The upper and posterior third of the great sciatic notch was denuded of periosteum and a stellate fracture radiating from the notch upward and backward for an inch and one-half was found, the bone being pressed slightly inward upon the sciatic nerve. In attempting to cut out the tumor, a cavity in it was opened, followed by a gush of fluid, and a small clot. He feared he had opened an aneurismal sac. Running his finger into this sac to find the opening of the artery, he found the interior of the cavity incrusted with small spiculæ of bone. There was no collapsing of the cavity nor any further escape of the fluid after the first gush from it. He removed several small pieces of denuded bone and as much as possible of the tumor. Not a drop of pus was found in the growth. The operation was a very bloody one and the patient was much depressed. The wound was packed with iodoform gauze and dressed antiseptically, the patient put between blankets, stimulants administered hypodermatically and hot bottles used to bring on reaction. Examination of the growth disclosed it to be a subperiosteal sarcoma of the mixed type. The patient did well for weeks following the operation, but died some forty-three days after the operation and nearly eight months after the accident.

DR. J. MCFADDEN GASTON, of Atlanta, read a paper entitled

OPERATION FOR FIBRO-CYSTIC SARCOMA INVOLVING THE RIGHT INFERIOR MAXILLARY BONE.

The patient, a colored woman, was 35 years of age, and presented herself with a reproduction of the growth, at the clinic of the Southern Medical College. Examination revealed a large mass involving the region from the angle to the mental curve of the right lower maxillary bone, extending upward to the zygomatic arch and inward to the root of the tongue. There was a protuberance on indurated substance in the middle and a tense elastic portion above, with a larger formation of the same character below. The entire cavity of the mouth on the right side was filled with the tumor. The previous operation was performed about two years ago, and the patient states that the growth commenced some six years prior to that time. An operation being advised and consented to, the patient was instructed to take two compound cathartic pills night and morning to procure free evacuations from the bowels, and to refrain from food on the morning preparatory to undergoing the operation. At the outset of the operation a strong silk ligature was passed through the tongue and its ends knotted together so as to form a loop, which was to be made available to prevent the tongue from dropping back and interfering with respiration at a subsequent stage of the operation. This precaution was made requisite from the record of cases in which suffocation has resulted from its omission when the lateral attachments of the tongue have been severed. The next step was the extraction of two of the lower incisor teeth, where it was expected to divide the thick bony structure subsequently, either with the saw or bone forceps. This would effect its detachment in front and another section behind the angle of the jaw, through the condyloid would separate the bone behind, so that all the intervening portion of the lower maxillary bone on the right side should be detached with the tumor. Dr. Gaston's greatest concern in regard to hemorrhage connected with the operation was relieved by the expectation of leaving the condyloid process and thus obviating the risk of wounding the internal maxillary artery by its removal. Having planned to accomplish the incision and dissection, so far as possible, without entering the buccal cavity, and thus avoid the entrance of blood into the fauces, he first divided the skin from a point immediately below the middle of the lower lip along the line of cicatrix from the former incision back to the angle of the right lower jaw, and thence upward to the prominence of the zygoma, keeping away from the temporal artery in front of the ear. The skin was then dissected back on the lower side from the tumor and in like manner above to the zygomatic arch, thus exposing the exterior surface of the diseased structure without entering the buccal cavity. The few cutaneous arteries which were divided were secured with artery forceps in the course of the dissection on the lower border. Dr. Gaston outlined the further details connected with the operation. Following the operation there was a steady increase of coma, with a gradual decline of vital force until the death of the patient six days and four hours after the operation. With the favorable state of the wound in the progress of this case, and the final retention of urine, Dr. Gaston is disposed to consider the coma of uremic origin, but has not sufficient data upon which to base this opinion. The cause of death was given as septicemia in his certificate.

DR. M. B. HUTCHINS, of Atlanta, read a paper on

MALIGNANT GROWTHS OF THE SKIN: THEIR DIAGNOSIS AND TREATMENT.

in which he said that while not all the growths to be described are strictly malignant, in a literal sense, the term applies, in that they are either malignant or terminate in malignancy. We have the carcinomata of the skin with epithelioma as a related disease, and the sarcomata. Epithelioma being more frequently met with, Dr. Hutchins described this first: He said that authors described three varieties of epithelioma: the superficial, the deep-seated, the papillary. These three varieties were then interestingly described.

Coming to the treatment of epithelioma, he said this must be limited to local measures, as internal treatment has no value. Incomplete destruction or removal is liable to do more harm than good. Whether causties, the actual cautery, the galvano-cautery, écraseur or knife are used, the operation must be thorough and the destruction of the growth complete. The means used must be governed by the size, extent and situation of the growth. The causties are said to be best for superficial growths. Caustic potash may be bored into the diseased tissue, and into its border, any excess being neutralized by dilute acetic acid. It is not an exceedingly painful method. Pure carbolic acid, followed in a few minutes by nitric acid, is mentioned by Shoemaker. Chlorid of lime has been used, but it is very painful and has no advantages. Marsden's paste was referred to as an excellent application for certain forms of epithelioma, as the small, not too deep. The curette may be used for very superficial growths or preceding the caustic application.

Regarding the use of the knife, the author said there was a popular prejudice against it, and people would submit to anything in preference to its employment. There are recurrences after the knife but their frequency, their malignancy, and their terribly destructive action following inefficient or incompetently used applications remove none of the fear of the knife. For the majority of cases the knife is the only remedy, and it is to be preferred where not mechanically

contra-indicated. The deep-seated and the papular forms especially require excision. Every visible particle of the disease must be removed, and with it a perfect coating of healthy tissue.

Dr. Arthur G. Hobbs, of Atlanta, read a paper entitled "Treatment of Corneal Ulcers with the Galvano-Cautery."

Dr. J. W. Hallum, of Carrollton, contributed a paper on

CHRONIC SORE LEGS AND HOW TO CURE THEM,

in which he said that chronic sore legs were the result of a disease that we often meet in our healing journey. In the remarks of his paper he excluded specific and malignant ulcers, and discussed a simply chronic ulcer that has refused to heal from all efforts of nature that have been brought to bear upon it. The author had been curing such ulcers by painting them with carbonate of lead and linseed oil, in the following proportion:

Pure white lead (ground in oil) . . . . . ℥xv.
Raw linseed oil . . . . . ℥vi.

Mix well and sign, paint the ulcer once or twice a day after washing it with warm water. Dry well before painting. The best thing to apply the remedy with is a camel's hair brush.

He was not able to tell how this application effects a cure; but carbonate of lead is sedative, astringent, and probably possesses disinfectant powers, all of which the author considers quite essential in the cure of these ulcers. The shortest time he has been able to accomplish a cure by this method was six days. The ulcer was two and one-half inches in diameter and of three years' standing, but had not penetrated the entire true skin.

SECOND DAY—MORNING SESSION.

Dr. H. Perdue, of Barnesville, read a paper on

DIAGNOSIS.

He said the ability to make an early and quick diagnosis should be sought and, if possible, attained by every physician. It enables one oftentimes to abort disease, and even when this can not be done the violence of the attack may often be modified, and its duration abridged. Thoroughness should be the aim of every physician. None should be satisfied with attainments short of the ability to make a diagnosis through scientific and practical methods of research.

Dr. Luther B. Grandy, of Atlanta, read a paper entitled "Suture of the Tendo Achilles," in which he reported a case and exhibited the patient. Similar cases were reported by Drs. Battey, of Rome, and Wm. O'Daniel, of Ballard.

Dr. J. B. S. Holmes then read a paper entitled

MAKING AND CLOSING THE INCISION IN ABDOMINAL SURGERY.

He said that many surgeons, in doing abdominal work, pay more attention to time than the details that are necessary to secure results that are free from sequelæ. This not only reflects seriously upon the surgeon, but leaves the patient in many instances a sufferer for life, requiring often a second operation to cure what might have been prevented. A smooth wound with no cicatricial tissue, no abscess scars and no ventral hernia, is a pleasing sight, not only to the surgeon but to the patient. He would not pretend to say that the sequelæ following abdominal operations can always be prevented, but certainly with proper care and attention to the technique of the operation, if not prevented entirely, they can be reduced to a minimum. The author then went into the details of closing the incision in abdominal operations.

Dr. F. W. McRae, of Atlanta, contributed a paper on

APPENDICITIS, WITH REPORT OF CASES.

The author presented some tentative conclusions and opinions culled from papers and discussions which had fallen under his notice within the last few months.

In the fulminant cases there was no question as to the proper treatment. Nothing but an early operation would save the patient; but in the milder cases there was much diversity of opinion as to how we should proceed. The author's personal experience was confined to six cases of well-defined appendicitis. He had seen several other cases where there were some indications of inflammatory trouble in the right iliac fossa, but no well-defined lesion. They all got well. Of the six cases one, a child of 2 years, died before he saw the case, after an illness of five days. From the history of the case and a careful examination of the body he had no doubt as to the diagnosis. Of the other five cases two passed through one attack, one through two attacks, and one through four attacks of well-marked appendicitis in his hands. In all, except one, he advised operation. All declined it. All except one are now in good health. The one who has had four attacks he thinks will require an operation later, as there is a well-defined persistent tumor in the right iliac fossa.

Dr. Samuel C. Benedict, of Athens, delivered the orator's address. He selected for his subject,

SUGGESTION AND ITS THERAPEUTIC USES.

By suggestion is meant simply an impression made from without, through one of the five senses, upon the cells of the cerebral cortex; it is a sensory impression by which either motor phenomena only are developed, or mental action such as revival of memory. In some instances a language used in childhood and long since forgotten, has been brought again into speech as clearly as though never lost. Autosuggestion arises without external impressions and is typical in dreams or delirium. Now, as explanatory of such phenomena a working hypothesis has been formulated by Hudson which explains better than any previous theory the causes for such phenomena. His reasoning is that man has two minds, one of which he calls the objective, and one the subjective mind, and further, that the subjective mind, which is the store house of the memory and the seat of the emotions, is constantly amenable to control by suggestion, and is incapable of inductive reasoning.

Dr. P. R. Cortelyou, of Marietta, reported an interesting case of inflammation of external auditory canal following facial erysipelas in a woman, sixty-eight years of age.

Dr. Dunbar Roy of Atlanta, read a paper on

CHRONIC OTORRHEA, ITS SIGNIFICANCE AND TREATMENT.

This paper dealt with: 1, chronic discharges from the external auditory meatus; 2, polypi and foreign bodies; and 3, discharges originating from and dependent upon pathologic conditions of the middle ear or its contiguous cavities. With reference to the treatment, the author said that painstaking research into the history of every case; the correlation and comparison of all phenomena; a thorough knowledge of the normal and abnormal appearances of the parts, coupled with a sufficient amount of clinical experience were necessary for the treatment of all ear diseases.

Dr. J. H. Shorter, of Macon, read a paper entitled

TREATMENT OF CATARACT.

He said all operations for removal of cataract have been by one of three methods: Depression, decission, or extraction. These three methods were then described in detail and the indications for each method pointed out.

Dr. H. McHatton, of Macon, followed with a paper on

TEETHING.

No one denies that dentition is a physiologic process, *pari passu*. As the infant departs from its natural state, teething is increased in violence. The infant who is fortunate enough to have a mother who is physiologically perfect, and who treats her child as nature intended, does not teeth the first year, but is liable to, the second summer. The one who has to be partially fed, teeths oftener and earlier than the above mentioned. The one that is bottle-fed from the start, and exclusively, teeths as a rule, early, and in many cases fatally. The author knew that most practitioners would agree that dietetic errors are the cause of nearly all digestive disorders in the infant, and that these disorders are in the beginning and non-inflammatory stage most amenable to appropriate treatment, but by neglect they become the worst type of diseases that we have to contend with. The author then quoted from standard authors in regard to the subject of teething.

Dr. Richard Douglas of Nashville, addressed the Association by invitation on "Surgical Shock."

Dr. R. H. Taylor, of Griffin read a paper on

AN OPERATION FOR HEMORRHOIDS.

He describes the operation as follows: "After preparing the patient for operation in the usual way, fix the hemorrhoid with vulsellum forceps or a stout tenaculum, which is firmly held by an assistant. Instead of cutting a groove around the base of the pile for your ligature in the usual way, make an elliptical incision through the mucous membrane, including the hemorrhoid in the ellipsis. Turn back a small flap of mucous membrane from the base of the tumor. Now, have the assistant make firm traction on the pile while you pass a double ligature of stout chromicized catgut through the pedicle, which may be much reduced in size in some instances by separating it from the muscular coat of the bowel from below upward. Firmly secure the ligature and cut away the tumor as close to the ligature as possible, only leaving enough stump to safely prevent slipping of the

ligature. Then close the flaps over the ligated stump with a suture of the chromicized catgut. This leaves you with a closed wound which if aseptic will practically heal in four days.

DR. R. P. COX, of Rome, read a paper entitled

SACRIFICIAL SURGERY OF THE OVARIES, TUBES AND UTERUS FOR UTERINE FIBROIDS AND UTERINE CANCER.

In the treatment of uterine fibroids and uterine cancer, radical interference is often the best hope for the one and always the only hope for the other. The rather indefinite, though usually given, moral ground of justification for excision of the pelvic organs is to save life, to preserve from destruction a patient's usefulness or her capacity for the rational pursuit of happiness, or to relieve serious and permanent impairment of these natural rights. The author said that any medical man who advises or performs these radical operations on vague indications, without the ability to give an honest and reasonably intelligent opinion as to the necessity and probable results and, in doubtful cases, without the sanction of skilful and conscientious counsel, has failed in his duty and dishonored his profession. The author concludes that in nearly all cases supposed to be operable carcinoma uteri, we should try to exclude cancer by the microscope, but if this examination confirms the diagnosis of cancer, we should proceed at once to amputation, or in a certain sense, excision, by the galvano-cautery, and not by vaginal hysterectomy. Abdominal hysterectomy is indicated only in certain cases where the malignant disease is complicated by enlargement, such as by myoma or pregnancy.

DR. W. B. GILMER of Macon, read a paper entitled "Drainage of the Peritoneal Cavity with the use of the Siphon Pump."

THIRD DAY—MORNING SESSION.

DR. R. M. HARBIN, of Calhoun, read a paper entitled

TREPHINING IN HEAD INJURY WITH PARALYSIS OF OPPOSITE ARM FOLLOWED BY FUNGUS CEREBRI,

and reported an interesting case which he considered a distinct indication for operative interference. The patient was 25 years of age, and in a fight was struck upon the head with the heavy end of a thirty ounce billiard cue, and was carried home in an unconscious condition in about two hours thereafter, having vomited a number of times. The patient was seen on the third day after the injury with the left arm completely paralyzed, sensation being normal. A diagnosis of compression of the brain was made, probably due to a blood clot. Trephining was done on the seventh day after the injury.

Dr. Harbin drew the following deductions from the case:

1. That this patient would almost certainly have died in the first instance had not the clot been removed.

2. That there was a positive indication for trephining.

3. That it furnished a striking example of the practical value of the applied rules of topographical anatomy of the brain.

4. That the prevention of fungus cerebri is more important than the cure, and is not to be looked for with proper precaution.

5. That the occurrence of fungus cerebri is very unusual in such a small trephine wound without injury to the dura mater.

DR. GEORGE H. NOBLE, of Atlanta, contributed a paper on "Phlegmasia Alba Dolens," and DR. J. M. HULL, of Augusta, one entitled "Foreign Bodies in the Larynx."

AFTERNOON SESSION.

DR. WALTER A. CROW, of Atlanta, read a paper entitled

CANCER OF THE UTERUS, THE REMOTE RESULT OF OPERATIVE INTERFERENCE,

in which he reported a series of cases that had come under his care recently, and which served to impress two facts: 1, the common occurrence of this disease especially in women approaching the menopause, and 2, the great disposition to overlook their true nature or probable tendency, and to incline to use palliative measures until the disease assumes a malignant form, and we thereby lose our golden opportunity of effecting a cure in most cases.

DR. H. W. STAFFORD, of New York, read a paper by invitation on

THE EXTRACTION OF CLEAR LENSES FOR MYOPIA,

and reported five interesting cases. Previous to describing the operations, he related the circumstances which led him to believe that the extraction of the lens, whether clear or not, would arrest the progress of myopia.

RESPONSIBILITY AND RELATION OF THE GENERAL PRACTITIONER TO GYNECOLOGY, PREVENTIVE AND NON-PREVENTIVE.

This was the title of a paper read by DR. R. R. KIME, of Atlanta, in which he said to properly prepare for special work in gynecology requires years of practical experience in general medicine and obstetrics. The most successful practitioner is one who seeks to know and eliminate as far as possible the cause of disease. In gynecological work it is not so often a question of eliminating the primal cause of disease as it is to correct the results of antecedent causes. To illustrate: Pyosalpinx is not a primal cause, but the result of a previous inflammation simple, infectious, or specific. Pelvis peritonitis in the female is not idiopathic, but the result of diseased conditions elsewhere.

Having cited some of the many instances in which the general practitioner may prevent disease and injury to the female and lessen gynecological work, the author then pointed out a few instances in which his duty is reversed, and for the sake of brevity presented them in the form of *Don'ts*.

DR. J. G. EARNEST, of Atlanta, reported a case of extra-uterine pregnancy in a woman, 32 years of age, the mother of three children.

DR. J. C. AVERY, of Atlanta, read a paper entitled the "Tampon in Gynecology," and DR. BERNARD WOLFE, of Atlanta, one entitled "A Plea for the Closer Recognition of Dermatology as a Specialty."

The following officers were elected:

President: Dr. Willis F. Westmoreland, of Atlanta.
First Vice-President: Dr. H. Taylor, of Griffin.
Second Vice-President: Dr. Wm. B. Tate, of Tate.
Treasurer: Dr. E. C. Goodrich, of Augusta.
Secretary: Dr. D. H. Howell, of Atlanta.

Dr. J. McFadden Gaston, of Atlanta, introduced the following resolution, which was unanimously adopted:

WHEREAS, The AMERICAN MEDICAL ASSOCIATION at its last meeting provided for an expression in regard to the Code of Ethics from the different State Associations, to be laid before the forthcoming meeting at San Francisco; it is hereby

Resolved, That the Medical Association of Georgia reasserts its adoption of, and conformity to, the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, as heretofore recognized by that body, and authorizes this record of its adherence to the same.

After drafting, introducing and adopting resolutions of thanks, the Association, on motion, adjourned to meet in Savannah on the third Wednesday in April, 1895.

NECROLOGY.

FREDERICK MOSSBACKER, M.D., of Saginaw, Mich., April 17, aged 54.——John Fisher, M.D., of Arcadia, Ohio, April 17.——Clark E. Chappell, M.D., of Canandaigua, Mich., April 12, aged 78.——T. M. Ebright, M.D., of Akron, Ohio, April 11.——Wm. A. Conway, M.D., of New York, April 17, aged 54.

MARY P. SAWTELLE, M.D., of San Francisco, aged 59, in New York city, April 22. She was a native of New York but moved to California and was the first woman to enter a medical college on the Pacific slope. In 1872 she originated the bill which gave women, married or single, residents of any Territory or of the State of Oregon, the right take up Government land.

CHARLES COREY, M.D., of Brooklyn, died at his home on the 4th ultimo in his sixty-fifth year. He was a pioneer specialist in that city, having adopted the rôle of a neurologist after a preliminary training in Bloomingdale Asylum and elsewhere. He was always a general practitioner but devoted to mental and nervous patients the greater part of his professional interest and work. He took up his residence in Brooklyn about thirty years ago, at a time when not more than one other physician of that city had embarked in specialism in mental diseases. He was early and largely employed in important cases, not a few of which became *causes célebres* in the criminal or civil courts. He was a clear-headed observer, and made a telling medico-legal witness. He was a man of scholarship and popular in the profession as a consultant. He was a graduate in medicine of Dartmouth College, in the class of 1856, in which he was classmate of Dr. Benning Crosby, who was also, for a time, a well-known resident of Brooklyn. The death of Dr. Corey was unexpected, occurring as it did after a brief attack of pneumonia, while the Doctor was yet in the prime of his professional activity.

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SATURDAY, MAY 5, 1894.

THE BRITISH SANITARY INSTITUTE AND THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The Sanitary Institute of Great Britain has taken a new departure in deciding to publish a journal of its proceedings instead of an annual volume of Transactions, following in this the example set by the British and the AMERICAN MEDICAL ASSOCIATIONS. The journal is to be, in the first instance, a quarterly. Its first part, April, 1894, has just been issued. The object of this alteration is to circulate to the members at an early date the papers read at the various meetings of the Institute, to afford an opportunity for recording information of general sanitary interest and to keep the members more closely in touch with the work that is being carried on.

The Sanitary Institute is the analogue of our American Public Health Association. The one was originated in 1876, the other in 1870. Usually we follow our British cousins on the track of sanitary progress. In this instance we led. The objects of both institutions are identical—the advancement of sanitary science and the promotion of organizations and measures for the practical application of public hygiene. Our Public Health Association has been remarkably successful in certain lines of its work. State and local boards of health have been called into being by the impetus it gave to sanitary progress. It was successful even in effecting the establishment of a National Board of Health; and its influence is felt in the protection from exotic disease which we now have through the agency of the Marine-Hospital service. The meetings of the Association have been as a liberal education in sanitary science and practical sanitation to health officers and others in attendance; and much excellent committee work has been done, sometimes involving, as in STERNBERG'S Committee on Disinfectants, a considerable amount of laboratory research. In its methods our Association followed those of the medical societies. So also the Institute in so far as it held ordinary meetings at its headquarters in London and annual meetings or congresses in various provincial towns "to bring together those interested in sanitary science, to read papers and discuss questions affecting the public health;" but the prominence which the Institute gave to its educational line of work led to a speedy divergence from the time-honored methods of the medical associations. To educate the public, special attention was given at the meetings to the arrangements for the exhibition of sanitary apparatus and appliances for which medals and certificates were awarded. During the sixteen years that exhibitions have been held, a uniform system of judging the exhibits has been organized, and in the Transactions for 1893 an illustrated and classified list of all those to which awards have been made since the incorporation of the Institute has been published.

It was proposed also to examine those persons who were desirous of official positions as inspectors and surveyors under the local sanitary authorities, and to issue certificates of qualification when merited. During the first year only eight candidates appeared. Progress was slow in this direction; but after a time the examinations became popular and the certificates of the Institute appreciated. In 1890 the examinations, which up to this time had been held in London only, were extended to the provinces to make them accessible to candidates living at a distance; and now, by legislative enactment, sanitary inspectors appointed after Jan. 1, 1895, must hold the Institute's certificate of qualification. During the past year 510 candidates were examined. Meanwhile the examinations revealed the fact that candidates for appointment as sanitary officers had great difficulty in obtaining knowledge of the principles of sanitation, whereupon the Institute established courses of instruction suitable for these officers; and the large attendance at the first course thus instituted showed how much this development of teaching work was appreciated. Other courses of popular lectures were also established with advantage, as on Domestic Hygiene, for the purpose of instructing ladies in matters relating to household sanitation and on the Sanitation of Industries and Occupations, for the purpose of giving information to those responsible for the management of factories and instructing those likely to become factory inspectors. One of the most interesting sanitary exhibits in the first issue of the *Journal of the Institute* is the list of the lectures delivered during the past year as part of the educational work accomplished. Among the list of lecturers we find many well-known names: A. WINTER BLYTH, SIR DOUGLAS GALTON, FRANCIS VACHER, W. H. CORFIELD, SIR CHARLES A. CAMERON, and others.

We commend this first issue of the *Journal of the Institute* to the consideration of the Executive Committee of the American Public Health Association, as showing how a voluntary organization educates and graduates the sanitary officers of a country having a central health board which might have been charged with this duty. We have no health board, nor have we any provision for the education of our inspectors. Our sanitary officers have to gather up their learning as they go along, and for the furtherance of all good sanitary work the columns of this JOURNAL are always open. *We favor the creation of a Department of Public Health!*

VARICELLA IN ADULT LIFE.

The occurrence of chickenpox in adults is so rare an occurrence, that there are many practitioners who have never seen a case of that nature beyond the age of puberty. The *Lancet*, of March 10, contains a reported case, contributed by DR. MALCOLM MARGAVE, together with some editorial comments. The case is given as follows:

"I recently attended a family in which three children had well-marked chickenpox infection conveyed by the mother, who had visited a friend whose child was convalescent from the same complaint. The mother, aged 31, had a slight rise of temperature, 100 degrees F., and vesicles appeared on the chest, back and abdomen, with a few on the face. Subsequently they came out in a succession of crops and quickly scabbed over. Beyond the slight rise of temperature and headache there were no other constitutional symptoms. My excuse for troubling you is that I read in FAGGE the following: Most writers say they have never seen it in grown up patients; but HEBERDEN relates one case in which a mother caught it from her children, and another instance of it in an adult female was observed by GREGORY. I should be glad to know if this is so."

The editor's remarks point to his belief that a single attack of varicella effects an almost complete exemption from a second attack. He says:

"Chickenpox is no doubt a rare disease in adults in this country, probably because children seldom escape attack by it. We know, however, of cases of the occurrence of this disease in a number of African coal trimmers in a homeward-bound vessel from India, who were infected by an English child suffering from chickenpox. This child, for the purpose of isolation from other children, had been placed in the surgeon's cabin overlooking the engine-room, through which these men passed."

We favor the creation of a Department of Public Health!

"BOY BANE"—OR THE CIGARETTE.

A member of the Board of Education of New York City, MR. CHARLES B. HUBBELL, has interested himself in the prevention of cigarette-smoking by schoolboys. He has inaugurated leagues, in the various schools, having an exclusive membership among those boys who are willing to take a pledge to abstain from the use of the deadly cigarette until they have attained the age of 21 years. He expects to have an enrollment of 75,000 young leaguers, on or before the first of May. This plan of organization has spread to other cities, and it will not be at all surprising if we hear later of a National League and witness an anti-cigarette Congress. MR. HUBBELL uses a variety of arguments to enlist the coöperation of ambitious and thoughtful youth. For example, he adduces the fact that the medical examiner of one of the larger life insurance companies said recently that he would not accept as a risk the life of an applicant who had steadily smoked cigarettes between the ages of 8 and 18. He also calls attention to the fact that professional men and shopkeepers will no longer take boys known to be cigarette-smokers into their employ, so immediately does the habit interfere with their usefulness. These facts are to the point, although no evidence is needed to convince intelligent people of the perniciousness of cigarette-smoking by boys.

We favor the creation of a Department of Public Health!

SAMPLES FROM THE "MEDICAL" ARCHIVES OF THE PENSION OFFICE.

A reporter of the Washington *Capital* has been permitted to look over some of the affidavits and reports of the Pension Bureau, and copies the following letter said to have been given by the "family physician" of one of the claimants for pension:

"In anser to yur inkiry i wos ekquanted with Martin White Before Went in armery and also his famerly physician. He was rase in a mile of me. He was sond when he went in the servise, he complain offen times, his fingers hand is drod crucked he cant do manly labor to a grate extent I was passen by where he was making rales last sumer two years ago i took notis he could not work as abel body he had to rest as long as he worked, he complains of his nerves been stiff I sene him every two months or so an cant do nothing to cure him. I give him almost every thing they is for stiff nerves, but they is still stiff. I don't think he can do nothing much. You have my examination of him in your office. P S You are given some two much pensions i no some by me that drod 8 per month which was a plenty now dros 12 talkin of laing in for increase I say they don't reserve it."

The certifier of the above is said to be a member of the local board of pension examiners. Inasmuch as no name is given it is not possible to confirm the statement.

A claimant is said to have made the following answer:

"My age is 70; I can not say precisely when and where I contracted senile debility. It has come on quite gradually. I seemed free from it at my birth; yet if I had been born so far back as I was, I am sure I would not be suffering with it so seriously as now. The most eminent authorities are agreed that old age is of a permanent character and I begin to feel certain that my chances of becoming younger are exceed-

ingly slim. In my case senile debility is not due to vicious habits; yet I have a habit of getting older each day. I have been infirm for the last ten years."

Among the affidavits of examiners are these:

"We find dulness in this man's heart and the general symptoms that the book of instructions calls for."

"In the center was also seen a large red mass as large as a small hen's egg, or rather a small egg, be the hen herself of dimensions stately or otherwise."

"I find a scar on this man's foot at the junction of the sole with the upper."

"Please give voice test for deafness." Answer of board:

"Claimant's voice not characteristic of deafness in this case."

"The claimant alleges loss of memory, but as we could not take it out and examine it we have nothing to say, only his statement, which we rate nil."

"Claimant can't read without glasses very much. He never could much. He never learned."

Office letter:

"The claimant above named is required to file his sworn statement showing when, where and how he contracted senile debility; the cause of disability not alleged in his declaration filed under act of June 27, 1890, and that such disability is not due to vicious habits, and is, to the best of his knowledge and belief of a permanent character."

It is quite possible that the various bureaus at Washington have some curiosities of composition, but we hope that there are none that reflect more seriously than the above upon the profession of medicine. The whole shows that the system of appointments of medical examiners for the pension service needs revision. It has always needed it.

TESTIMONY AS TO PROBABLE RESULTS.

The volume of personal injury litigation at the present time is something appalling. Almost every case, too, has to have its expert witnesses. This makes the rules stated by the Supreme Court of Missouri, in the case of BARR v. City of Kansas, decided March 5, 1894, of considerable interest and value. It says that the plaintiff, in these personal injury cases, may recover damages suffered up to the date of the verdict, and also such damages as will be suffered in the future; but no allowance for future damages should be made, except for such as it is reasonably certain will result from the original injury. Physicians may testify as to the probable result of personal injuries upon the health and life of the plaintiff. The question whether future damages will, with reasonable certainty, flow from the injury is, however, one for the jury. But it does not follow that the witnesses must be interrogated in language which would be proper and appropriate in an instruction. The object of the examination is to get the opinions of persons competent to express an opinion on the subject, and the different shades of opinion which the physicians may entertain, leaving it to the jury to say whether future damages are reasonably certain. To illustrate: Here there was evidence that the plaintiff received severe and permanent injuries to the spine and womb. In such a case, the court holds, the most that any physician can say as to the effect of the injuries on the life of the injured person, however expert or learned in his profession, is to give his opinion as to the probable consequences. An opinion being expressed, it becomes a proper subject for cross-examination, and in the end it is for the jury to determine the question as to the degree of certainty.

A TERRIBLE SANITARY MISTAKE.

The Washington correspondent of this JOURNAL telegraphed us in time for this edition as follows:

WASHINGTON, D. C., May 1, 1894.

"Coxey's army," 437 men and 30 horses, fatigued and improperly and scantily fed, without shelter, camping in enclosure 60,000 square feet, recently drained, containing five decomposing manure dumps, and abutting James Creek. Foul smelling, open sewers and many filthy gutters, no shade, temperature about 90 at 10 o'clock P.M. The health of "army" and city is threatened. Several cases of diarrhea are reported. The location is said to have been approved by district authorities after inspection.

We entirely disapprove of Mr. Coxey's misguided mission, but his deluded followers are human beings, and it would seem that with the noble hills all about Washington, some better place might have been found as a camping ground for these poor creatures than the most insalubrious spot in the District. The animals at the Rock Creek Zoo are better cared for.

CORRESPONDENCE.

Report on the Revision of the Code of Ethics.

DETROIT, MICH., April, 1894.

To the Editor:—Through the JOURNAL of the ASSOCIATION this report has been laid before the profession. Already it has been repudiated in several quarters. The cry is raised "Vote it down! Vote it down!"

From the language of Dr. N. S. Davis in the JOURNAL OF THE ASSOCIATION and the *Occidental Medical Journal;* of the "Conservative Member;" of Dr. Gould in the *Medical News*, the reader would infer that the authors of the proposed revision were denizens of the infernal regions and had made a special trip to the world for the purpose of working injury to the medical profession. Satire, invective, ridicule, suspicion, etc., are variously combined in these several communications, but in no one of them is a single reason given to support the belief that the adoption of the Committee's report would fail to benefit the profession.

It is interesting to inquire the occasion of such an ebullition. The report is a simple scientific statement of those lines of conduct which the Committee believed would best promote the harmonious activity of the entire medical profession. This statement differs from the one now in authority, mainly by giving greater liberty of action to the individual physician; only this and nothing more. The report shows that the Committee believed that with the changes incident to the last forty years, especially the better general and technical education prevailing among both profession and people, it would be wise to provide for an increase of the personal liberty accorded to the individual physician. In

its study of the subject the Committee apparently could find no reasons for longer withholding such liberty. Nor do any of the criticisms thus far published show that scientific medicine, the honor of the profession or of the AMERICAN MEDICAL ASSOCIATION would suffer any damage from the adoption of the report. The points of objection to the revision are: 1, the granting of increased liberty of professional association; 2, increased liberty in profiting by mechanical inventions; 3, an increased liberty of promoting professional acquaintance.

Concerning the first, the report says that doctors should choose their professional associates from among those who are well educated in all respects; who have a legal right to practice medicine in the place where they live and finally sustain a good reputation in their own community. The report ventures to suggest that any doctor should have the liberty to select from those having the above qualifications such as he pleases for his professional associates. It does not dictate whom he shall select from this group of educated, reputable, law-obeying physicians but affords him the liberty of making his own choice. In this respect the report recognizes the right of each physician. We are fully aware that the granting of this right would probably not alter in any respect the practical action of most physicians, but it is natural to suppose that all would feel better to be trusted more fully in the selection of their associates. The report places the copyrighting of medical books and the patenting of mechanical appliances used in medicine and surgery upon the same basis. As authors now receive remuneration by the copyrighting of their books, so inventors are permitted to patent their inventions, if they are so disposed. In each case natural talent and industry are permitted to claim a suitable reward by availing themselves of legal protection. It is inconceivable that any medical gentleman would harm the profession by this liberty. At any rate the harm from patenting of inventions would be of the same character as that from the copyrighting of books. It is strange that such distinguished gentlemen as Dr. D., Dr. G. and Dr. G. 2d, who have made lots of money out of the profession by securing copyrights on the excellent books they have written, should kick against permitting the doctor who can not write a book, but is able to invent a valuable instrument, from trying to make some money by his special talent. We are unable to see that the Committee has made any mistake here, and we believe the change proposed would result in the acceleration of professional development along the best lines. If not, why not? Simple negation will not do. The profession wants the evidence on which to decide that the report is bad and should be rejected. Why should it not have the increase of liberty proposed?

Concerning the increase of liberty given by the report to physicians in making known to their professional brethren their special qualifications, physicians outside of hospitals, dispensaries and medical colleges are permitted to follow the example of those inside of these institutions. It simply puts the entire profession upon the same plane in advertising itself. Dr. D., Dr. G. and Dr. G. 2d are connected with medical institutions and so are advertised over the entire medical world by the reports, circulars, announcements, etc., of these institutions, as experts in genito-urinary diseases, general medical cases, or eye and ear diseases, and yet they object because John Jones, M.D., who can not get a place in medical college or hospital or dispensary, is permitted to tell his professional friends that he regards himself competent to treat diseases of the chest or spleen, etc. It is very natural that those who have the cream of advertising should want to prevent others from getting a little of the same. It seems to us that this additional liberty in matters of professional advertising will remove a feeling of envy and jealousy, that unbidden, sometimes steals over the mind of the humble practitioner as he sees the staring advertisements of the great hospital physician, or the college professor, heralded with pictures of the same persons, printed in the great dailies of the city in which the AMERICAN MEDICAL ASSOCIATION meets; when he reads the interviews of these distinguished gentlemen published in the daily papers; or the notices of big operations done by professors; in short, he will feel that as an humble individual in the profession, he will have the right to do exactly as his more fortunate and distinguished brother does on a larger scale.

The report gives every member exactly the same liberties in advertising himself. Naturally those who have exclusive privileges will cry, "vote it down!"

Is the AMERICAN MEDICAL ASSOCIATION prepared to "vote down" this cry for an increase of personal liberty on the part of the great mass of the thinking medical profession? If so, what are the reasons by which it will support its vote? It claims to desire the affiliation and coöperation of all fully educated, reputable, law-abiding physicians, and if so will it refuse to adopt the amendment to this end proposed by the Committee? It claims to treat all physicians with equal justice. If so, can it refuse to do that justice to the mechanical inventor which it has ever accorded to the writer of medical books? Or will it longer refuse to common doctors the rights of advertisement which it has granted to the college professor, the hospital or the dispensary physician?

The report is notable in that no mention is made of sectarian medicine or of its adherents. It takes for granted that the persons who may adopt this Code as expressing their ideas of professional conduct, are doctors, first, last and all the time. In this respect it fairly exhibits the best thought and feeling of our profession during all ages, as well as in the present. Those in the profession who believe in the largest personal liberty of the individual physician, in equal opportunities for all, in professional association with the learned, reputable and law-abiding, and in one profession unmarred by even the name of sect, in one National Medical Association commensurate in extent and breadth with the North American continent, will find on careful personal study of the report, abundant reasons for laboring to secure its adoption.

On the other hand, those who admit of no change in our knowledge of professional relations during the past two generations; those who are too indolent to think about the measures for uplifting the profession; those who follow the voice of another to whom they have committed their power to think about the AMERICAN MEDICAL ASSOCIATION; those who are dominated by interests mercantile which are furthered more by the existing than the proposed state of things; all these will oppose the adoption of the report. All these will join in "voting it down."

Certain we are that if the matter could be fairly brought to the candid thought of every physician in the land, the report would be adopted with a majority of at least seventy-five thousand.

LEARTUS CONNOR, M.D.

Code Revision.

SAN JOSE, CAL, April, 1894.

To the Editor:—It will be remembered that the writer hereof had something to say last year on the question of revision of the Code of Ethics, viz.: In the JOURNAL of April 22 and May 27, 1893. I then urged what I considered strong and cogent reasons why the Code should be revised, and have seen no reason to change that opinion since.

There had been, up to those dates, an individual writing over the signature of "A Conservative Member," who had occupied many columns in the JOURNAL for many months, to convince the profession of the beauties and perfections of our present Code. I have wondered what has befallen "Conservative" that he has kept silent in the face of the still threatening change in the dear old document. Is it barely possible that in the year of grace, 1894, he has the full courage of his convictions and now signs his real name? Be this as it may, the proposed amendments to the Code are now before us and several champions are in the field against any alteration.

There is no one who has a better right to speak on the Code question than Dr. N. S. Davis, of Chicago, whose re-

marks in opposition to revision or alteration in any particular, appear in the JOURNAL for April 14.

Dr. Davis is frequently called "the Father of the AMERICAN MEDICAL ASSOCIATION," and was present at the organization of that body, and more than likely he was a member of the committee who boiled down the original Percival Code of 20,000 words to 5,240 words. The Percival Code has been spoken of by some of the individuals discussing the question of revision, with as much reverence as would be shown almost any sacred writing on earth. I have never had the pleasure of reading this grand specimen of inspired composition, except in the form of the mutilated and concentrated extracts, known as the Code of our ASSOCIATION.

But if the 15,000 words that were expunged were of like tenor with a large portion of what has been preserved to us by the original Committee as our Code, then I am thankful that the Committee had the good judgment to boil the thing down and spare us of this generation the necessity of perusing the mass of meaningless verbiage. And if that original Committee had the right to set aside three-fourths of the original document, is it not possible, after the lapse of forty-seven years, that it may seem wise to expunge a little more of Father Percival's nonsense?

I have read the proposed new Code or revision, and according to my humble judgment it is superior in almost *every* particular to the original document.

It is much more brief, although in this particular there is opportunity for improvement. The new language wherever introduced is superior and more dignified than the language of the original. It does not bear so much the stamp of being addressed to fledglings. It has left out that entire article of ten sections addressed to the abyss of empty space, under the title, "Obligations of Patients to their Physicians." It has left out, as a rational committee should have done, the clause relating to the holding of patents by members of the profession.

I am happy to say that all these improvements are in exact accord with the arguments I made last year. I do not say that they have been made on account of those arguments, but it simply shows an agreement of thought on the subject.

The Committee has wisely recognized the existence of specialties in the profession and made some happy suggestions and regulations in that particular; all of which must be disagreeable to the champions of the old Code, as they want not one word added to or taken from the document. They seem not to conceive that new conditions have arisen since 1847.

But pardon me if I shall presume to reply more specifically to two or three of Dr. Davis' arguments. He complains that the Committee "has dropped whole sections here, and lines and words there, introduced new sections, and has placed their revised Code on a radically different basis." Certainly, that is the object of revision; to make some changes.

As regards the question as to whom one may consult with, I did not enter into it last year only incidentally, neither do I care to do so now, except by way of a general remark or two.

This feature of the old Code was adopted for the purpose of killing off homeopathy and other pathies and isms. In the face of history let us ask ourselves the question to what extent has that Section of the Code limited the growth of homeopathy since 1847? If it has limited, I am thankful.

There can be no consultation between a *genuine* homeopath and a regular physician so far as therapeutics is concerned, but only in regard to diagnosis and surgery. The writer has helped to kill off homeopathy by observing the law of the old Code for twenty-nine years in regard to consultations!

The next objection by Dr. Davis is in regard to the elimination of the entire article in relation to the "Obligations of Patients to their Physicians," and he sets up the new doctrine that this part of the Code is for the purpose of informing the *physician* as to the duties of patients toward him. I observe nothing in the ten sections devoted to this subject that is not addressed directly to patients. If it was written for the profession it makes the matter still more ridiculous.

Dr. Davis says: "It is no excuse for these omissions to say that the Code was not intended for the perusal of patients or the public, for it was really intended for both; and if physicians were more diligent in placing copies of the Code in the hands of their more intelligent patrons it would greatly benefit all parties." I wonder how many copies of the Code have been distributed to the public since its adoption! Forty-seven years ought to be time enough to get a start in that line. If not, the case is hopeless!

It is objected that the revision allows physicians, devoting attention to special departments of our art, the privilege of so stating on their sign or private card.

If memory serves me rightly it was when Dr. Davis was editor of the JOURNAL, he was pressed to answer the question: "How shall a specialist call attention to his business?" and the answer was that "he may state that his practice is limited to the treatment of certain diseases."

Where is the authority in the Code for Dr. Davis' statement and interpretation in this particular? There is not one word or suggestion authorizing it. It was a new law conceived by himself. Did not that forced interpretation indicate that something had changed since 1847?

But the new law given by the editor of the JOURNAL was so worded as to prevent general practitioners from using the expression, "Special attention devoted to certain diseases, etc."

Now what are the practical facts all over the United States? Specialists for years have called attention to their business in newspapers, private cards and signs; and further, every general practitioner states, whenever he feels like so doing, that he treats a special class of diseases. If only a simple statement is made it is considered honorable by probably every county society in the United States. Therefore that part of the revision which pretends to prohibit in this particular is a dead letter already and why have it there? Let every practitioner state, if he cares to, that he treats a special class of diseases.

I wish to call attention to one other point, and that refers to the question of patents: "Equally derogatory to professional character is it for a physician to hold a patent for a surgical instrument, etc."

Dr. Davis is so wedded to the old Code and so determined that not one syllable shall be changed, that his zeal leads him to contend for this, the most inconsistent of all the inconsistencies in the Code. Why should not the ingenuity of the surgical profession be stimulated by the hope of reward in patenting new inventions, the same as in any other department or industry? The great inconsistency manifests itself in the fact that all physicians use patented instruments and appliances. It is then perfectly honorable to use a patented instrument, but not honorable to hold a patent for an instrument! Therefore if a physician wishes to profit by an invention, all he has to do is to step out of the AMERICAN MEDICAL ASSOCIATION, patent his instrument, then exhibit it at the meetings of the ASSOCIATION and all the doctors will buy. "Consistency thou art a jewel!"

No man can fairly make an argument against a member of the AMERICAN MEDICAL ASSOCIATION holding a patent for an instrument, unless he can conscientiously stand up and say he would let his patient die before he would use a patented apparatus of any kind. Otherwise than this, it behooves every one in the interests of consistency to keep silent on the patent question.

It would be interesting if some champion of the Code would define the difference, so far as honor is concerned, between holding a patent for a surgical instrument or a copyright for a medical book. Is it not a distinction without any difference? All medical books are copyrighted. Why is the writer of a medical book any more entitled to remuneration for his time and talent than the inventor? Echo answers, why?

I beg to call attention to my two former articles on the subject of revision in the JOURNALS of April 22 and May 27, 1893.

In conclusion, allow me to say that I consider the revised or new Code superior in almost every particular to the old Code, and I hope with very little modification, if any, it will be adopted at the San Francisco meeting of the ASSOCIATION.

Most respectfully,

A. C. SIMONTON, M.D.

The Code Revision.—An Open Letter.

BOSTON, April 26, 1894.

To H. D. Holton, M. D., Chairman of the Majority Committee of the Revision of the Code of Medical Ethics:

Dear Sir:—Perhaps I have been remiss in my duty, as also in privilege, in permitting so long a period to elapse before replying to your thoughtful letter. However, I have felt that I would prefer to examine your work as completed before writing, knowing that it is not too late for your Committee to accept modifications which meet their approval.

It is so much easier to play the rôle of critic, than to formulate, that I would in advance thank you for your earnest efforts in the behalf of the profession.

If you will note that section of my address of two years ago which prompted the appointment of your Committee, you will see that I view the mission and scope of the AMERICAN MEDICAL ASSOCIATION from quite a different standpoint than that of the majority report of your Committee. First, that it should be a representative body of the whole profession, at present consisting of quite one hundred thousand in number, doubtless to be doubled in the next century. Each and every member of our profession should be so co-related to the ASSOCIATION, that he is an integral part of it, as for example, the voter in the most obscure town has the assurance that he is an active participant in the affairs of the commonwealth, with a no less just pride that he is a citizen of the general government, and may become a sharer in its highest honors and emoluments.

In the actuality of bodily presence, as a participant in the affairs of our great annual meetings, the number must be limited, and in the limitation of the number, it should be representative. This delegated power must necessarily mean something and that something must find its expression as a sharer in the governmental affairs of the ASSOCIATION. This is felt in the power to select their own officers and, under codified rules of action to govern their own affairs. The more important object, however, sought thereby should be clearly scientific improvement. To keep these dual objects equally in mind is not always easy. I have long felt that the possibilities of membership in the ASSOCIATION were sufficiently liberal. On the one hand, it should be considered an honor and a privilege worthy of attainment, while on the other, the restriction should not be so great as to exclude any earnest, ambitious professional man from becoming a member. In making active membership representative, this delegated authority from necessity acts for a more or less large constituency who are debarred the privileges of attendance and *who* shall be thus represented, your governmental rules must determine. Here lies your first fundamental difficulty, which I recognize as much as any member of your Committee.

Had we uniformity of State Examining Boards which would determine the status of a properly educated doctor, this work would be comparatively simple. A proper amount of scientific attainment would be our criterion. But hard as we all have labored to elevate the standard of medical education, I confess reluctantly to the feeling that, as yet we have not differentiated sufficiently to define readily the standard of our educated physician, and fear that, for the present at least, we shall have to fall back upon the unsatisfactory cognomen of the "regularly educated." Otherwise the political bias of the Examining Boards of the different States will give no end of practical difficulties, as instanced in your attempted answer to the query: "With whom may we properly consult?" States like Massachusetts which have no statutory limitations as to who may practice medicine, would fail entirely of qualification.

I have given my hearty approval to the efforts inaugurated under the leadership of Dr. Connor, of Detroit, for the improvement of the Section work. In these subdivisions, it is easy to find place for the proper presentation of original research, and the thoughtful consideration of every contribution for the advance of the science and art of our profession, and these subdivisions must be the great corner-stones upon which to erect the temple of medical science. However, as viewed independently, they lack cohesion, and our great National meetings, to reach a higher plane of success, must have something in common for all. To this end, fortunately our science blends in the discussions of public questions, upon which great masters are ever ready to consider it a high honor to address the entire assembly. For this reason it seems to me that beside the oration of the President, the annual addresses are of importance.

Will it not be well that we content ourselves in the present limitations ascribed to our Business Committee for the better scientific development of the Sectional work, and grant to the active members present that privilege, so dear to the American citizen, of exercising his delegated power in the choice of officers? This indeed may be stigmatized as political, nevertheless it enters into the very existence and makeup of the American boy before he differentiates into a doctor. Experience proves that no matter how select the committee, this quality does not depart from the members of the organization. Your Business Committee could hardly expect to be devoid of this attribute and with a certain show of justice might be criticised as "a close corporation, political ring, etc."

May we not, at least for the present, be content with your definition for the requirements of the graduate of medicine that he be carefully and thoroughly trained before he can be considered a general practitioner, and "that specialists must be this and something more?" Has not our ASSOCIATION long since recognized the special subdivisions of practice as "proper and legitimate" fields of labor, and that specialists shall be governed by the same rules of etiquette as has been laid down by general practitioners? Is not this quite sufficient?

There are many minor subjects upon which I can well understand there will be, and I think ought to be, differences of opinion. Under this head in our present Code comes a long chapter on the duties of patients to physicians. I am often asked in what does the obligation consist? Certainly the relation in many ways is a mutual one, and how can the physician give instruction, unless he is himself taught, or governed by certain rules of action!

As to the question of patenting of instruments, many justly claim hardship and loss by being denied this privilege, while others assert that the honor attached to the presentation of some new device should be ample compensation. If this be true, it is certainly aggravating, as has happened several times to me, that some other man with more effrontery than honesty, claims, and is accredited with the honor. In the patenting of medicines, the field where modern chemistry is doing so much for our profession, this question is still open to discussion. However, I can not help thinking that the subject of patents is such a prominent source of abuse and a covert means of swindling, that the individual better suffer personal loss than risk the injury that may accrue to the general public.

To me it has always been a matter of surprise that so much acrimony of feeling should be aroused in the discussion of codes and by-laws, but this pertains alike to all societies. Upon fundamental principles all should be agreed, in the matter of detail much latitude of action must be permitted. This is necessary when honest and able men disagree and will occur when designing men of doubtful honor would take advantage. When President of the ASSOCIATION I made an earnest effort to reconcile the differences between

the great wings of the New York State medical profession. It seemed to me that the resolution which was unanimously adopted by the ASSOCIATION in 1885 as a conciliatory measure to meet the objections raised by the New York State Medical Society was ample:

"*Resolved*, That Clause 1, Article IV in the national Code of Ethics is not to be interpreted as excluding from professional fellowship on the ground of differences of doctrine or belief, those who in other respects are entitled to be members of the regular medical profession. Neither is there any article or clause in the said Code of Ethics that interferes with the exercise of the most perfect liberty of individual opinions or practice."

Reluctantly I was forced to believe that the time was not yet ripe for the harmonious adjustment of difficulties which pertained far less to the assumed faults of the Code, than to bitter dissensions on the part of individual members.

It was with this thought, without consultation with any, that I selected your honorable committee and imposed upon them the serious task of the consideration of the revision of the Code of Ethics. The gentlemen composing the committee were all known to me personally as men distinguished, not only for their learning and ability, but judging from their previous labors in the advancement of medical science, I deemed the ASSOCIATION peculiarly fortunate in being able to secure their services. It was a surprise to many that the first year of your efforts should be confined to a revision of the Constitution and By-laws, when you were appointed to consider only the revision of the Code of Ethics, doubtless, however, with the thought of securing an harmonic whole. To very many your revision seems extreme and I would suggest a marked modification somewhat as here outlined, preserving all there is of value in our really very excellent old Code, modifying only along the lines of advancing science, since if compelled to choose between the old and the new, as you have formulated it, I must support the former, an opinion which I can not doubt the large majority of our members will give approval. HENRY O. MARCY.

On Revision of the Code.

NEW YORK, April 24, 1894.

To the Editor:—The venerable father of the ASSOCIATION in the issue of April 4, 1894, in his disapproval of the revision of the Code of Ethics asks the question: "In what direction this progress?—that of science and honor, or that of mammon and dishonor?" Now, as he has asked, it is discourteous not to reply. Also, this is the time for members to speak out their sentiments, as a matter of history and material for action. Dr. Davis says the Committee has *emasculated* the section on patents and proprietary medicines, making it prohibit only patents "for secret nostrums" (*i.e.*, ours, from *nos*—we); "a medicine the ingredients of which are kept secret to restrict profits to proprietor or inventor."—Webster; in other words, for "mammon and dishonor."

I have no doubt that the majority of the members have used antipyrin, phenacetin and sulfonal, out of which the German owners have reaped millions of dollars; yet they are practically secret nostrums patented, and I doubt if they can be made from the formulæ.

The ethics of these chemicals say that ASSOCIATION members can swallow their Code for Germans and not for Americans; this is free trade with a vengeance. There is a good deal of progress towards "mammon and dishonor" in the above use of such chemicals.

Further, the old Code shows the profession in a bad, if not dishonorable condition for themselves as book-makers. The father of the ASSOCIATION has copyrighted his books; *i.e.*, his medical ideas in paper and ink; it is the same as a patent or proprietary nostrum (ours). Now, suppose he had produced ideas in hard rubber, metal, wood or even paper without ink; to patent such would be considered mammon and dishonorable, but protection for paper and ink is honor.

In eternal common sense and fact, medical ideas, whether printed or not, are entitled to protection or no protection alike.

I know a medical man who got up medical ideas in hard and soft rubber, linen, iron and silk; these ideas he freely gave away to the profession; in England they were said to be the best for 6,000 years; English medical students could not graduate unless they knew about them. One day, when he thought he had thus done well he was much taken down by an AMERICAN MEDICAL ASSOCIATION member, one of the most eminent in the world in the line of such ideas, by the query: "Did you make any money by those ideas?" "No," was the reply. "You ought to have made $100,000. Why did you not get them patented? How foolish!!!!" Not much honor, then, in giving the world those ideas, according to one of the very supporters of that Code that prohibited patents! Tell a member he shall not patent his ideas, and then blow him up because he did not and followed the Code! Is this honorable, consistent with truth, morality, the Ten Commandments, the Golden Rule? How does the Code of Ethics work as to nostrum (ours—proprietary) advertisements in the JOURNAL? Take I—— G——, advertised by the JOURNAL, notwithstanding that the Connecticut State Agricultural Experiment Station after examination reported that it was common flour heated, bought at from 2½ cents to 5 cents and sold at $1 per pound. Is it science to call common flour an extract made by chemistry when it is a powder chemically made? And the "greatest food for invalids?" Is this science and honor? And yet the old Code believers allow this, and the ASSOCIATION makes money publishing untruths.

If a member should advertise a proprietary medicine in the JOURNAL or elsewhere, he would be subject to discipline. An outsider has greater privileges. I approve of the Committee's report as to this section also because it is a dead letter. Members are getting patents in spite of the Code, as they get copyrights. There is often more science in instruments than in books. The instrument represents new ideas; medical books are too often made by threshing out old straw and somebody's ideas because they sell best.

Another consideration: The late Dr. Louis Elsberg, a member, invented after years of study an admirable forceps for topical applications to the larynx, throat, posterior nares and nares. It took much study and time to get the right angle, 120 degrees, for the bend. It went on the market unprotected. The makers, who generally think they know more than the inventor (try it, if you do not think so), changed the angle variously—so that the forceps were a failure; I well remember how badly Dr. Elsberg felt when he knew that his instrument did not do the good it was capable of and thus relieve suffering, simply because he did not protect it from changes. I have known of like cases with other medical men; one gentleman of great eminence in his specialty in surgery has the pleasure of knowing the Government has ordered thousands of dollars worth of his instruments on which he has no protection, and hence no profit. Would it not have been better for this man, as well as others, to have made some money out of his brain children and thus conserved energy and perhaps brought forth more ideas of value? So long as our present system of economics is based on every man inheriting or earning money for his support, so long should his property be protected. We seem to forget that the competition will break down unjust monopolies and that only valuable things will stand. The greatness of our country has been made possible by inventions; the science of medicine would be nowhere but for patented inventions in locomotion, manufactures

and arts. They have made it possible to hold our annual meetings, and even in San Francisco. I deliberately say that the old Code, as to the ethics of medical ideas outside of books, is a poor arrangement; when any new ideas (save as above) come, we are to close ourselves up like the box turtle and let them blow over us—we are not to encourage inventions that will benefit humanity (Elsberg's forceps)—we are to wait until public opinion comes and kicks open our shell; and yet we can use antipyrin *et id omne genus*, swallowing our Code and all; we can blow up inventors for not patenting medical ideas when we have told them not to; we can as a medical association, advertise nostrums by the dozen to the world in the very number of the JOURNAL in which good Father Davis asks the question I am trying to answer. Is not this "mammon and dishonor?" For one, I am grateful to the Committee for what they have done so fearlessly and deftly; I admire our venerable father's energy, point and force, and what I have written here is simply on my own responsibility, declarative of my ideas in answer to the question frankly, plainly and honestly. I wish others would speak out their sentiments, pro or con, and then this vexatious matter could be settled and the ASSOCIATION attend to work of which there is dying need and members are dying in need of, to-wit: The "new gospel of Materia Alimentaria."—(Joseph Jones, M.D., LL.D., New Orleans.)

I look forward to the time when any person qualified to practice medicine, and who calls himself simply a physician and surgeon with no sectarian title, can walk into the AMERICAN MEDICAL ASSOCIATION to full-hearted membership and "not to doubtful disputations," and the Code will consist of the law of the eternal fitness of things which needs not man's arbitrary measurements, but does things rightly because complemented by the law of compensation, the executive of Justice.

E. CUTTER, M.D.

Medical Institutions of San Francisco.

SAN FRANCISCO, April 26, 1894.

To the Editor:—The AMERICAN MEDICAL ASSOCIATION will meet in San Francisco June 5 to 8. During the meeting the members will be cordially invited to visit the following institutions:

City and County Hospital, Potrero Avenue and 22d Street, contains 450 beds. Superintendent, F. H. Titus; visiting surgeons, R. A. McLean, C. N. Ellinwood and G. F. Shiels; visiting physicians, W. W. Kerr and J. O. Hirschfelder; oculists and aurists, W. E. Hopkins and Geo. Merritt; visiting gynecologists, H. Kreutzmann and C. A. von Hoffmann.

St. Mary's Hospital, First and Bryant Streets, is conducted by the Sisters of Mercy. Visiting surgeon, A. T. Leonard; gynecologist, Luke Robinson; physicians, W. S. Thorne and M. J. Fottrell; oculists, G. H. Powers and W. E. Hopkins.

German Hospital, 14th and Noe Streets, contains 200 beds. Visiting surgeon, J. F. Morse; ophthalmologist, A. Barkan; gynecologist, H. Kreutzmann; physician, Rudolph Baum.

French Hospital, Bryant Street near Sixth. Visiting surgeon, Dr. Bazan; physicians, J. D. de Chantreau and G. Gross; oculist, K. Pischl.

St. Luke's Hospital, Valencia Street near 27th, contains 75 beds. Visiting surgeon, C. G. Kenyon; physicians, Washington Dodge, F. W. D'Evelyn and C. J. Burnham; oculists, G. H. Powers and A. H. Voorhies; gynecologist, W. H. Mays.

Children's Hospital, 3700 California Street, contains 100 beds including the Maternity. Visiting physicians, Lucy M. F. Wanzer, Emma S. Merritt, Edna R. Field, Mrs. C. B. Brown, Charles von Hoffmann, A. P. Woodward; oculist and aurist, W. E. Hopkins; orthopedic surgeon, Harry M. Sherman.

California Woman's Hospital, 3118 Sacramento Street, contains 50 beds. Visiting surgeons, C. B. Brigham, O. O. Burgess, W. Winterberg, C. Max Richter, Dudley Tait, L. L. Dorr; surgeon in charge, F. W. Vowinckel.

United States Marine-Hospital is situated in the Presidio Reservation on the banks of Mountain Lake, and is accessible by the Sacramento Street cars.

Another hospital is on the eve of completion, viz.: Lane Hospital, which will contain over one hundred beds; this has been erected by the writer at a cost of $150,000 and has been presented by him to Cooper Medical College, thus giving this institution unsurpassed facilities for the work of medical education.

This pile of buildings, which is in conspicuous view to the traveler who enters the Golden Gate, together with the lands accompanying the gift, equals in value a half million of dollars, and has been presented as an offering to the Healing Art in its merciful service to suffering humanity.

The members of the ASSOCIATION will also have an opportunity of visiting the medical college erected and presented to the University of California by the late Dr. H. H. Toland. Some of the members will remember their visit to this institution during their sojourn here, twenty years ago, when they were given a reception there by the distinguished founder. The heart of Dr. Toland would have beat less exultantly on that occasion could he have foreseen that in less than twenty years there would be a movement on foot to sell and abandon the edifice which he had planned as an enduring monument to the name of Toland. And should history repeat itself, and the unpitying hand of ingratitude pull down the monument which otherwise will perpetuate the names of Lane and Cooper, then would the scene in heaven as painted by a modern Greek poet be realized, viz.: Benefaction and Gratitude as strangers did not recognize each other in Heaven, since they had never met on earth.

L. C. LANE, M.D.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St. P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

Circular from Committee of Arrangements.—The AMERICAN MEDICAL ASSOCIATION will meet in San Francisco, June 5, 1894.

The trancontinental railroads have made favorable rates, viz: $65.50 for round trip from all Missouri River points, which is one and one-twelfth fare. The Southern Pacific Company's rates from Portland, Ogden and El Paso are one fare.

All tickets sold at these points carry five coupons of admittance to the Mid-Winter Fair.

The roads beyond Missouri River points are still charging about one and a half fares.

Can not our brethren east of the Rocky Mountains yet induce the Central Traffic Associations and Trunk Lines to equalize these rates? Several agents in response to our circulars asking for a single fare, replied favorably, but stated that it required united action of the several Associations. An extensive itinerary for those who come from the Northern and Middle States is published in the JOURNAL OF THE ASSOCIATION. In the April number of the *Occidental Medical Times* Dr. Parkinson has published an extensive itinerary of excursions and entertainments in this State for members and their families during and after the meeting. Those who come from the Southern States will probably come over the Santa Fé and Sunset routes. It will be well for them to come early and "do" the southern part of the State on the way up, and then depart via the Ogden or Shasta route. This will afford the greatest possible opportunity to note the varied resources of the Pacific Coast, and the variety of scenery and climates within our borders. The Colorado Desert through which the road passes, is 312 feet below the sea-level, with a dry hot atmosphere.

Going out over the Denver & Rio Grande, one reaches an altitude of 10,500 feet; while on the Shasta route the road passes Castle Crag Tavern, winding around the base of Mount Shasta, whose summit is 14,444 feet high and clad in eternal snows.

Colton and Riverside, the first important points reached on the Sunset route, are already far-famed for their delicious fruits and extensive orange groves which line the streets and highways for many miles.

Drs. M. F. Price and K. D. Shugart of the local committee on reception will take delight in showing them to visitors.

From here to San Diego and Coronado it is only four hours' ride. They are located upon the bay in the extreme southwestern part of the State only four miles from the Mexican border. This is now a fashionable all-the-year-round resort with one of the largest and best equipped hotels in the world, its main dining room having a capacity for a thousand guests.

Facilities for bathing and boating in the sheltered waters of the bay are unexcelled. Drs. C. M. Fenn, W. A. Edwards and C. C. Valle, of the local committee will extend every courtesy to visiting members.

Los Angeles, the chief city in the south, too well-known to need any description here, is only five hours distant on the way north. Here Drs. H. Bert Ellis, H. S. Orme, Walter Lindley, Jos. Kurtz, J. P. Widney and W. L. Wells, of the committee on reception will be delighted to show visitors the city and its suburbs, Pasadena, Santa Monica and other points of interest.

Santa Barbara, another charming resort by the sea, famous for its adjacent olive groves in which it rivals Palestine, is only three hours' ride from Los Angeles. Here Drs. S. B. P. Knox, J. M. McNulty and R. J. Hall, of the local committee will do the honors of the occasion.

Leaving Santa Barbara by rail, the next point of interest will be Bakersfield where an extensive system of irrigation has transformed a desert into a veritable garden of Eden.

Then comes Fresno, the largest and most successful vineyard district in the State, where Drs. Chester Rowell and A. J. Pedlar, of the local committee will pay every attention to visitors.

It is only seven hours' ride from here to San Francisco, where the members of the reception committee will meet the visitors and escort them to their respective hotels. Those who come in over the northern routes, via Mount Shasta, Castle Crags Tavern, Soda Springs, Chico and the State capital at Sacramento, may desire to depart by the Santa Fé or Sunset routes. R. H. PLUMMER, Chairman.

San Francisco, April 25, 1894.

Program for Section on Laryngology and Otology.—"Electro-Vibratory Reduction of Turbinated Tissue," Dr. J. Mount Bleyer, New York City.

"Tubage as Accessory Treatment in Cases of Septal Deformity," Dr. Price Brown, Toronto, Canada.

"Diseases of the Accessory Cavities," Dr. Frederick C. Cobb, Boston, Mass.

"Epithelioma of the Larynx with a Case," Dr. Cheatham, Louisville, Ky.

"The Causative relation of Nasal Obstruction to Lung Disease, with New Mechanical Devices for Treatment," Dr. O. Denison, Denver, Col.

"The Dangers of the Use of Cocain in Treatment of Diseases of the Upper-Air Passages," Dr. D. B. Delavan, New York City.

"The Removal of Exostosis and Deflections of the Nasal Septum," Dr. A. De Vilbiss, Toledo, Ohio.

"Pseudo-hysterical Aphonia," also "A Case of Retention Cyst of the Frontal Sinus," Dr. F. B. Eaton, Portland, Ore.

"The Treatment of Hypertrophy of the Tonsils in Young Children," Dr. George Z. Goodell, Salem, Mass.

"Hypertrophy of Luschka's Tonsil—Etiology and Clinical History Based on an Analysis of Two Hundred Private Cases," Dr. E. Fletcher Ingals, Chicago, Ill.

"Cigarettes," Dr. J. C. Mulhall, St. Louis, Mo.

"The Relation between Nasal, Laryngeal and Thoracic Disease," Dr. S. E. Solly, Colorado Springs, Col.

"Deflection of the Nasal Septum and its Surgical Treatment," Dr. E. A. Spilsbury, Toronto, Canada.

"Report of Cases. *a*—Intra-nasal Fibroid Tumors. *b*—Total Adherent Soft Palate. *c*—Septal Abscesses," Dr. J. E. Schadle, St. Paul, Minn.

"Laryngeal Tubercle Cured by Tuberculin," Dr. A. J. Erwin, Mansfield, Ohio.

"Carcinoma Laryngis; with Report of Case of Total Extirpation," Dr. Norval H. Pierce, Chicago, Ill.

"Hygienic Cures of Laryngeal Diseases," Dr. Marion Thrasher, San Francisco, Cal.

"Relation of Diseases of Upper Air Passages to Diseases of Eye and other Organs," Dr. J. G. Carpenter, Stanford, Ky.

"The Treatment of Hay Fever," Dr. A. C. Wolfe, Columbus, Ohio.

"How and Where to Drain the Antrum in Empyema," Dr. Eugene S. Talbot, Chicago, Ill.

"Diphtheria, Its Etiology, Clinical Pathology and Treatment," Dr. Marcus M. Johnson, Hartford, Conn.

"Abuse of the Galvano-Cautery in Rhinology," Dr. W. H. Daly, Pittsburg, Pa.

"Laryngeal Lupus," Dr. J. D. Arnold, San Francisco, Cal.

"The Value of Antroscopy (Endoscopy of the Antrum of Highmore)," Dr. Henry L. Wagner, San Francisco, Cal.

"Report of a Case of Laryngeal Neoplasm Simulating the Everted Nostril," Dr. S. K. Merrick, Baltimore, Md.

"Syphilis of the Upper Air Passages," Dr. Ramon Guiteras, New York City.

"The Easiest Adenoid Operation with New Instruments," Dr. Arthur G. Hobbs, Atlanta, Ga.

"Pseudo-Membranous Laryngitis," Dr. Wm. H. Parke, New York.

"Retro-Pharyngeal Lymphad Enetis," Dr. W. E. Casselberry, Chicago, Ill.

"Intra-Laryngeal Growths," Dr. J. E. Sinclair, Nashville, Tenn.

"Naso-Pharyngeal Tumors," Dr. R. P. Lincoln, New York City.

"The Middle Turbinated Bone," Dr. Arthur Levy, Denver, Col.

"Fibro-lipoma of Pharynx—Report of Case," Dr. John O. Roe, Rochester, N. Y.

"Surgical Treatment of Chronic Otorrhea and of Chronic Catarrhal Otitis Media," Dr. C. H. Burnett, Philadelphia, Pa.

"Internal Massage and Vapors in the Treatment of Chronic Aural Catarrh," Dr. H. V. Würdemann, Milwaukee, Wis.

"Some Experimental Research in Electro-Mechanical Contrivances for Relief of Middle-Ear Deafness," Dr. Geo. Wilkinson, Omaha, Neb.

"The Eustachian Openings in the Pharynx," Dr. E. Cutter, New York.

"Demonstration of New Instruments," Dr. S. S. Bishop, Chicago, Ill.

"Experiments on the Eustachian Tube by means of the Tongue thrust into the Naso-Pharynx, Dr. H. Stillman," Seattle, Wash.

The following have promised to send papers but have not given titles:

Dr. C. H. Guibor, Topeka, Kan.; Dr. E. Shurley, Detroit, Mich.

E. FLETCHER INGALS, M.D., President, Chicago,
JOHN F. FULTON, M.D., Secretary, St. Paul.

SOCIETY NEWS.

Central Illinois District Medical Society.—The following resolutions were adopted at the meeting of the District Medical Society of Central Illinois, held at Pana, April 22, 1894, relative to the prevention of blindness:

WHEREAS, Laws have been enacted by the Legislatures of

several States relative to the prevention of blindness due to ophthalmia neonatorum; and

Whereas, Efforts are being made by the Illinois State Board of Charities to influence the passage of a similar law by the Illinois State Legislature of 1893–5; be it

Resolved, That the District Medical Society of Central Illinois convened at Pana, April 22, 1894, hereby indorses and commends the efforts being made by the Illinois State Board of Charities to secure appropriate legislation relative to the prevention of blindness due to ophthalmia of the newborn.

Dr. Rauch.—In memory of the late Dr. J. H. Rauch, be it

Resolved, That the District Medical Society of Central Illinois hereby expresses its appreciation of his inestimable services which have raised the standard of medical education, the influence of which is felt in every State in our Union; of his unceasing zeal in the suppression of quackery in our own State, and of his persistent energy and superior knowledge, the influence of which has secured for him deserved distinction among the eminent sanitarians of the nineteenth century.

Resolved, That this Society expresses a deep regret that the death of him who is to be regarded a benefactor to the medical profession has robbed us of a friend and co-laborer.

Resolved, That the Secretary be instructed to inscribe these resolutions in the minutes, and send a copy of the same to the Journal of the American Medical Association.

W. J. Eddy, M.D., President.
J. N. Nelms, M.D., Secretary.

The American Pediatric Society will hold its sixth annual meeting at Washington, D. C., May 29, 30 and 31, and June 1, 1894. The sessions will be held at the Arlington. The following is the preliminary program:

Address by the First Vice-President, "A Eulogy on Drs. John M. Keating and Charles Warrington Earle," by F. Forchheimer, M.D., Cincinnati, Ohio.

"Eulogy on Dr. T. F. Sherman," by T. M. Rotch, M.D., Boston, Mass.

"The Influence of Blood-Supply on the Irritability of the Spinal Motor Centers," by B. K. Rachford, M.D., Newport, Ky.

"The Early Diagnosis of Potts' Disease of the Spine in Children," by Dillon Brown, M.D., New York City.

"A Case," by William B. Northrup, M.D., New York City.

"Tonsillotomy, followed by Diphtheria and 'Croup,'" by Augustus Caillé, M.D., New York City.

"Discussion on the Etiology and Prevention of Rickets; *a*, influence of race (especially in Italians), Irving M. Snow, M.D., Buffalo, N. Y.; *b*, influence of race (in Negroes)," by George N. Acker, M.D., Washington, D. C.

"A Case of Congenital Rickets," by C. W. Townsend, M.D., Boston, Mass.

"Infantile Scurvy, especially its Differential Diagnosis," by J. Henry Fruitnight, M.D., New York City.

"An Aid to the Sterilization of Milk in Artificial Infant Feeding," by A. Seibert, M.D., New York City.

Report of the Committee on the Nomenclature of Diseases of the Gastro-Enteric Tract, T. M. Rotch, M.D., Chairman, Boston, Mass.

Report of the Committee on the Nomenclature of Diseases of the Mouth.

Business Meeting (for members only).

"Acute Pyelitis in Infancy," by L. Emmett Holt, M.D., New York City.

"Infantile Myxœdema," by William P. Northrup, M.D., New York City.

"The Hemorrhagic Disease of the Newborn," by C. W. Townsend, M.D., Boston, Mass.

Samuel S. Adams, M.D., Secretary.

American Dermatological Association.—Program of the eighteenth annual meeting to be held at the Arlington Hotel, Washington, D. C., May 29, 30, 31 and June 1, 1894.

Officers for 1894: President, Dr. R. B. Morison, of Baltimore; Vice-President, Dr. G. T. Jackson, of New York; Secretary and Treasurer, Dr. C. W. Allen, of New York.

The meetings will be held in the new reception room of the hotel.

Tuesday, May 29, Business Meeting (with closed doors) at 9:30 A.M.; Report of Council; Nomination of officers for the ensuing year; Appointment of Auditing Committee; Proposals for Active and Honorary membership; Miscellaneous business.

Address by the President, Dr. R. B. Morison; Dr. G. T. Jackson, "Thyroid Feeding in Diseases of the Skin;" Dr. G. H. Fox, "The Rare Forms of Alopecia;" Drs. J. A. Cantrell and E. J. Stout, "A Case of Favus of the Head and Body."

Wednesday, Business Meeting (with closed doors) 9:30 A.M.; Report of Treasurer and Auditing Committee; Election of officers; Election of Active and Honorary members; Selection of time and place of next meeting; Miscellaneous business.

Report of Committee on Statistics; Dr. J. A. Fordyce, "The Pathological Anatomy of Pearly Epithelioma of the Face;" Dr. H. W. Stellwagon, "The Question of Contagiousness of Molluscum Contagiosum;" Dr. C. W. Cutler, "The Therapeutic Value of Urea in the treatment of Skin Diseases;" Dr. S. Sherwell, "Ichthyosis Congenita (so-called Harlequin Fetus). History of a case still living."

A general session of the Congress will be held Wednesday afternoon at corner 12th and F Streets to discuss "The Distribution and Control of Leprosy in North America."

First Paper, "Distribution," Dr. J. N. Hyde. Discussion, J. E. Graham.

Second Paper, "Diagnostic Features and Treatment," Dr. P. A. Morrow. Discussion, Dr. A. Van Harlingen.

Third Paper, "Contagiousness, Prophylaxis and Control," Dr. J. C. White. Discussion, Drs. G. H. Fox, J. D. Bryant and Gen'l W. C. Wyman, U. S. M. H.

Thursday, 9:30 A.M., Dr. J. C. White, "Angioma Serpiginosum and some other Dermatoses;" Dr. M. B. Hartzell, "The Protozoa-like bodies of Herpes Zoster; a contribution to the study of Psorospermosis;" Dr. W. T. Corlett, "Cold as an Etiological Factor in Diseases of the Skin, with Report of Cases;" Dr. C. W. Allen, "Acquired Idiosyncrasy for Quinin, showing peculiar Cutaneous Manifestations."

Friday, 9:30 A.M. Open discussion upon "Dermatitis Exfoliativa;" *a*, Its Clinical Forms; *b*, Its Etiology; *c*, Its Treatment.

Dr. E. B. Bronson, title to be announced; Dr. J. Zeisler, "The Relation of Impetigo Herpetiformis to Pemphigus Vegetans;" Dr. J. A. Fordyce, "Notes on Drug Eruptions."

PUBLIC HEALTH.

Smallpox.—Only six new infected points have been reported since the date of the last smallpox summary, April 21, to-wit: at Worcester, Mass., origin traced to Boston; at Manchester, Conn., supposed to have originated in a paper mill from infected rags; at Fort Wayne and at Kewauna, Ind., origin of the Fort Wayne cases attributed to Cleveland, Ohio, of the Kewauna case, unknown; at Jackson, Mich., origin traced to Chicago; at Roodhouse, Ill., origin supposed to be from a tramp. Appeals have been made to Governor Matthews and to the State health authorities of Indiana, urging that the Chicago division of the "commonweal army" be prohibited from entering Indiana and marching across the State. An order of the Indiana State Board forbids the introduction and sale of ready-made clothing from Chicago, unless accompanied by a certificate from the proper authority that the clothing has been disinfected in accordance with the rules of the American Public Health Association, the Board claiming that every recent outbreak of smallpox in Indiana "has had its origin in contact with Chicago tramps or goods made in that city."

Up to the close of April there had been 1,210 cases of smallpox reported in Chicago since January 1, and the disease showed no signs of abatement. There were 544 cases reported during the month of April—an increase of 78 per cent. over the previous month, and the rapid growth of the epidemic is shown in the following figures: January, 128 cases; February, 233 cases; March, 305 cases; April, 544 cases—total, 1,210. During the corresponding period of the first year of the epidemic of 1881–83, there was a total of 412 cases, and the great increase was then, as now, in the month of April—133 cases in April as against 99 in March. The parallel is not reassuring, and unless efficient suppressive and preventive measures are vigorously enforced during the next four months there is reason to apprehend another serious increase and spread next autumn. With the wise expenditure of the recent appropriation of $100,000, now at the disposal of Health Commissioner Reynolds, much may be done, and there is promise in the wholesale vaccination work still being carried on. Nearly 10,000 vaccine points are being used daily by the department. The general and

continuous enforcement of vaccination is the most efficient and the most economical protection against a smallpox epidemic.

Asiatic Cholera. — Advices from the cholera centers are characteristically meager. The epidemic at Lisbon continues to spread and the disease is reported to have extended to the left bank of the Tagus, cases having appeared in the province of Beira near the Spanish frontier. A cable dispatch from Madrid announces 225 new cases developed at Lisbon, April 25, and on the 29th ult. there were 284 cases under treatment. A medical commission has been organized by royal decree of the Portuguese Government to advise the civil authority in regard to measures to be taken to check the farther spread of the disease.

BOOK NOTICES.

Tables and Notes on Human Osteology for the Use of Students of Medicine. By SEBASTIAN J. WIMMER, M.A.M.D. With a preface by WILLIAM F. WAUGH, A.M., M.D. Philadelphia: Medical Publishing Company. 1894. Price $1.50.

This little book is one of the best brief compilations on the subject of osteology, and is in every way commendable, as an aid to the student in the study of osteology.

A Manual of Nursing in Pelvic Surgery. By LEWIS S. MCMURTRY, A.M., M.D. Louisville. 1894. Cl., pp. 92.

This book is a practical guide for nurses engaged in the surgical treatment of the diseases peculiar to women. The extensive experience of the author in this class of cases, has enabled him to place at the disposal of the profession, a very useful book. The method of preparation of the instruments and the patient; the details of the various duties of the nurse, during and after operations, are given with minuteness, and care. The work is destined to be one of the most popular of its class. The style is pleasant and clear and the little volume is attractively printed.

Hydatid Disease, Vol. II. By the late JOHN DAVIES THOMAS, M.D. (Lond.) F.R.C.S. (Eng.) A Collection of Papers on Hydatid Disease. Edited and arranged by ALFRED AUSTIN LENDON, M.D. (London), Sydney and London. 1894. Bds., pp. 166.

This volume has been prepared by Dr. Lendon from MS. notes and papers left by Dr. Thomas at his death. It opens with an appreciative biographic sketch of the author, and then discusses hydatid diseases as affecting the abdominal organs in Part I. This Section includes the liver, the spleen, the kidney, the peritoneum, the male pelvis, the female pelvis, and the testicle. Part II gives the hydatid disease of the thoracic viscera, *i. e.*, the lungs and pleura, the heart, the great blood vessels. Part III is devoted to the hydatids of the nervous system, principally a discussion of hydatid disease of the brain and its membranes and the spinal cord. This is stated to be essentially a reprint of Dr. Thomas' paper on this subject in the Transactions of the Inter-Colonial Medical Congress of Australasia. Part IV, hydatid disease affecting the bones, muscles and superficial structures, viz.: The bones and joints, the muscles and fasciæ and the breast. Part V concludes the work with a discussion of the operative treatment of hydatid disease. *a*, operations which destroy without removing the parasite; *b*, radical operations; *c*, operations involving the removal of the fibrous sac as well as of the hydatid cyst. There is no index. The book is very far from being exhaustive but is very useful and instructive as far as it extends.

The Etiology of Osseous Deformities of the Head, Face, Jaws and Teeth, by EUGENE S. O. TALBOT, M.D., D.D.S. Third Edition, with 461 illustrations. Chicago: The W. T. Keener Co. Cl., pp. 487.

In this edition of the book, the author states that he has extended the scope of his original inquiries into the "departments of oral and nasal medicine, and surgery of the eye, ear and face, so intimately related to dental medicine through the causation originally assigned for irregularities of the teeth and jaws. The alleged causative factors in the case of the nose and mouth were themselves often found to be of constitutional origin. The scope of the researches presented in this edition, therefore, while seemingly extended, are practically confined to the limits of the original inquiry."

The present volume adds to the current rogues' gallery a portrait of the assassin, Prendergast, with the cranial measurements.

Those who believe that the perpetration of some outrage upon society is *prima facie* evidence of insanity on the part of the criminal, will find much to sustain their views in this book. The neurologist and the sociologist will be entertained and instructed by much of the material in this volume, which is carefully written, well illustrated and handsomely printed. The work shows great research and patient industry, and the fact that it has passed to the third edition is evidence of its favorable reception by the profession.

MISCELLANY.

Change of Address.—Dr. Edward C. Mann from Brooklyn to Madison Avenue, between 67th and 68th Streets, to which point he has also removed his sanitarium.

A New Jersey Centenarian.—On April 20, Mrs. Hannah Chard, of Glassboro, N. J., attained her one hundred and fifth birthday. The fact that she was born of Pennsylvania Dutch stock, at Brandywine, in the year 1789, is said to be well authenticated. She is said to have gone over the battlefield at Brandywine when six years of age, picking up bullets and other mementoes of the contest. Her health and perceptive faculties are exceptionally good, and she is still able to go to church on Sundays, when the weather is suitable. She has over one hundred and eighty surviving grandchildren and great-grandchildren.

World's Columbian Commission; Award to Medical Department, U. S. A.—The Executive Committee of Awards of the World's Columbian Commission, through its Chairman John Boyd Thacher, has notified the Medical Department, U. S. Army of an award on account of its exhibit of hospital, laboratory and medical supplies as follows: For excellent equipment of a military hospital including furniture, medicines, instruments and dressings. For a clinical laboratory of approved design, well supplied with all the apparatus necessary to facilitate the study of clinical microscopy. For an interesting and important collection of sections, photo-micrographs and bullet effects, all showing a high grade of efficiency in this branch of the Army service.

"Christian Science."—The Supreme Court of Nebraska, in the case of State of Nebraska vs. Buswell, has at last dealt a too long deferred blow at the so-called "Christian Scientists." One of these irreverent charlatans was prosecuted in a lower court for practicing medicine contrary to the statutes of Nebraska, but was acquitted by the jury. On an appeal to the Supreme Court it was held that the act to establish a State Board of Health, to regulate the practice of medicine in Nebraska, etc., is as much directed against any unauthorized person who shall operate on, profess to heal, or prescribe for or otherwise treat any physical or mental ailment of another, as against one who practices medicine, surgery and obstetrics as those terms are usually and generally understood.

In its decision the Court said: "The object of the statute establishing a State Board of Health, etc., is to prevent imposition upon the afflicted by ignorant and unqualified pretenders to healing power, and any person not within the exceptions prescribed in said act, and not having complied with its requirements as to a certificate, who shall under any pretense operate on, profess to heal, or prescribe for or otherwise treat any physical or mental ailment of another, thereby renders himself liable to its penalties."

Philadelphia Notes.

PHILADELPHIA COUNTY MEDICAL SOCIETY.—The election for second Vice-President (which had been postponed from the January to the April meeting) of the Philadelphia County Medical Society was held April 18, when two candidates' names were presented; the regular nominee was Dr.

Clara Marshall, and Dr. John C. Da Costa was named by the opposition. The general interest in the contest was shown by a large attendance of members. The Society was ungallant enough to reject the representative of the Woman's Medical College, and Dr. John C. Da Costa was declared elected. At the same meeting Dr. John R. Kerr, of Canton, China, was elected to honorary membership in the Society.

ORTHOPEDIC SECTION, COLLEGE OF PHYSICIANS.—At the meeting of the Orthopedic Section of the College of Physicians on April 27, a boy aged 12 years was exhibited, who five years ago had been operated upon for double club-foot by Dr. Thomas G. Morton, who removed the astragalus from each foot. The patient could walk or run naturally, the feet were in good position, and he could stand on heels or toes, there was good ankle motion. Dr. Morton presented this case because some one had expressed a desire to examine the patient five years after the operation. The result was pronounced excellent. It is claimed by the operator that cases of club-foot, with reference to the tarsus, may be divided into simple and complicated. Those of the first class can be restored to normal position by manipulation and division of tendons. Those of the second class are complicated by a dislocation and malformation of the astragalus, which prevents ankle flexion by blocking the joint. In the latter class, excision of the astragalus gives satisfactory results.

THE CHINESE LEPER, WING, who had been an inmate of the Philadelphia Hospital for several years, died recently; his savings in bank notes, amounting to $130, which constituted his entire estate, were sent to Washington and there cremated, as it was not deemed proper to allow these notes to go into general circulation.

PHILADELPHIA is again to have a Botanic Garden. After more than a year's delay, councils have passed the ordinance opening to public use, with the University of Pennsylvania as Trustee, the tract of thirty-five acres on the west side of the Schuylkill, located between West Fairmount Park and the grounds which were recently acquired by the city by the purchase of Bartram's Garden. The University will proceed to erect a museum building on this site to accommodate the rapidly growing collection of objects illustrating archæology, ethnology, natural history and the arts, among which is the very valuable Babylonian and Egyptian remains, and the Maxville Somerville collection of engraved gems, etc.

Medical College Notes.

APPOINTMENTS.—Dr. Solon Marks has been elected Professor of Miltary Surgery; Dr. Walter Kempster, Professor of Mental Diseases and Dr. B. T. Phillips of Menominee, Mich., Professor of Surgical Anatomy and Operative Surgery on the Cadaver, in the Wisconsin College of Physicians and Surgeons.

COLUMBIAN UNIVERSITY.—The Medical Department of the Columbian University, Washington, D. C., held its annual commencement April 24. There were twenty-seven graduates.

THE ILLINOIS STATE BOARD OF HEALTH.—At its recent regular meeting, April 24-28, the Illinois State Board of Health added the following named colleges to its list of those recognized as "in good standing": St. Louis College of Physicians and Surgeons, Barnes Medical College, Beaumont Hospital Medical College, Marion-Sims Medical College, all of St. Louis, Mo.; Hering Medical (homeopathic) College, National Homeopathic Medical College, both of Chicago. The American Medical (eclectic) College of St. Louis was stricken from the list and refused further recognition.

The following tribute to the memory of Dr. Rauch was adopted by the Board:

"The Illinois State Board of Health, realizing that the causes of State medicine and medical education have sustained a great loss in the death of Dr. John H. Rauch, former President and Secretary of the Illinois State Board of Health, wishes to express to the profession at large, and to the family of the deceased, its high appreciation of the services rendered by Dr. Rauch, not only to the State of Illinois, but to our entire country.

"He was the first man in our midst to place the subject of public health upon a scientific basis, treating the vital questions of drainage and water supply with the intelligence and energy necessary to bring about results and projecting plans in sanitary science that will long remain models worthy the study of the student of public health.

"Dr. Rauch should be held in reverence by the medical profession for his zeal in the direction of advance of medical education. He was among the earliest and one of the most constant advocates of a more liberal education, and his schedule of "Minimum Requirements" is as widely known in this country as is medical education itself.

"Beside the recognition of Dr. Rauch's great knowledge of the subject he had made his own, this Board wishes to record its enthusiasm for and appreciation of his devotion to his work; likewise of his many virtues as a friend and physician."

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 21, 1894, to April 27, 1894.

Capt. WILLIAM L. KNEEDLER, Asst. Surgeon, will, in addition to his present duties as post surgeon at Ft. Mason, Cal., perform that of attending surgeon at San Francisco, Cal., until further orders.

Capt. JAMES D. GLENNAN, Asst. Surgeon, is granted leave of absence for one month, to take effect on or about April 24, 1894.

Major VALERY HAVARD, Surgeon, is relieved from duty at Ft. D. A. Russell Wyo., and ordered to David's Island, N. Y., for duty, relieving Major JOSEPH R. GIBSON, Surgeon. Major GIBSON, on being relieved by Major HAVARD, is ordered to Ft. Snelling, Minn., for duty at that station, relieving Major CHARLES K. WINNE, Surgeon. Major CHARLES K. WINNE, on being relieved by Major GIBSON, is ordered to duty at Ft. McHenry, Md., relieving Capt. CHARLES B. EWING, Asst. Surgeon. Capt. EWING, on being relieved by Major WINNE, will report for duty at Jefferson Bks. Mo.

Capt. NATHAN S. JARVIS, Asst. Surgeon, will be relieved from duty at David's Island, N. Y., upon the arrival of Capt. SAMUEL Q. ROBINSON, Asst. Surgeon, and will report in person to the commanding officer, Willetts Point, N. Y., for duty, relieving Capt. WILLIAM P. KENDALL, Asst. Surgeon. Capt. KENDALL, upon being so relieved, will report in person for duty at Ft. Columbus, N. Y.

LETTERS RECEIVED.

(A) Ashmead, Albert S., New York City; Antikamnia Chemical Co., St. Louis, Mo.; Atkinson, W. B., Philadelphia, Pa.; Armstrong, O. S., Detroit, Mich.; Antikamnia Chemical Co., St. Louis, Mo.

(B) Beck, Carl, Chicago, Ill.; Bettman, H. W., Cincinnati, Ohio; Beadles, C. H., Lewiston, Ill.; Baker, A. R., Cleveland, Ohio; Banzhaf, H. L., Manitowoc, Wis.; Bates & Morse Adv. Agency, (2) New York, N.Y.; Babcock, Robt. H., Chicago, Ill.

(C) Cunningham, S. A., Cedarville, Ohio; Chrysler, Oscar, National Home, Wis.; Columbia Chemical Co., Washington, D. C.; Castle, Wilmot & Co., Rochester, N. Y.; Collyer, Samuel, Tacoma, Wash.; Cobb, M. B., San Diego, Cal.; Callaway, J. M., Shreveport, La.; Connor, Leartus, Detroit, Mich.; Cheesman, Nelson & Co., St. Louis, Mo.; Cincinnati Sanitarium, Cincinnati, Ohio.

(D) Drake, G. W., Hempstead, Texas; Donovan, J. A., Lewiston, Me.; Dunglison, R. J., Philadelphia, Pa.

(E) Elder, S. & Co., Baltimore, Md.

(F) Foster, C. W., (2) Woodfords, Maine.; Focht, W. H., Tiffin, Ohio.

(G) Gouley, J. W. S., New York City.; Ground, W. E., West Superior, Wis.

(H) Haven, O. D., Youngstown, Ohio; Hummel, A. L., Philadelphia, Pa., (2); Howland, B. M., Panama, Iowa; Haywood & Haywood, Raleigh, N. C.; Hutchins, W. A., Orangeville, Ill.; Horner, Levi, Kildare, Oklahoma Ter.; Holton, H. D., Brattleboro, Vt.; Howe, H. H., Weston, Vt.

(I) Ingraham, C. W., Binghamton, N. Y.

(J) Johnson, H. L. E., Washington, D. C.; Jett, Elliott T., Fredericksburg, Va.; Jones, L. H., Odebolt, Iowa.

(K) Keen, W. W., (2) Philadelphia, Pa.; Kelly, W. R., Watonga, Okla. Ter.; Kellogg, J. H., Battle Creek, Mich.; Keener, W. T., Chicago, Ill.

(L) Lashells & Sons, Philadelphia, Pa.; Leighton, N. W., Brooklyn, N. Y.; Lichty, D., Rockford, Ill.; Lewell, John P., St. Louis, Mo.; Londonderry, Lithia, Spring Water Co., Nashua, N. H.; Leighton, N. W., Brooklyn, N. Y.

(M) Mooney, E. L., Syracuse, N. Y.; Markham, H. C., Independence, Iowa; McKinney, T. J., Gifford, Ill.; McMurtry, L. S., Louisville, Ky. Morrison, W. H., Holmesburg, Pa.; Mattison, J. B., Brooklyn, N. Y.; Malsbary, Geo. E., Cincinnati, Ohio; Marshall Printing Co., Marshalltown, Iowa; Marks, A. A., New York, N. Y.; Mathewson, J. O., Augusta, Ga.; MacGowan & Cooke, Chattanooga, Tenn.; Metzler, L. Harrison, Chicago, Ill.

(N) Neyman, E. H., Milwaukee, Wis.; Nelson, D. E., Chattanooga, Tenn.

(P) Pantzer, H. O., Indianapolis, Ind.; Pegram, E. C., Chicago, Ill.; Plummer, R. H., San Francisco, Cal.; Peacock Chemical Co., St. Louis, Mo.; Porter, G. H., Strawberry Point, Iowa.

(R) Ryan, C. B., Cincinnati, Ohio; Roberts, John B., Philadelphia, Pa.; Reed, R. Harvey, Columbus, Ohio; Ring, John, Chicago, Ill.; Remington Bros., Pittsburg, Pa.; Regar, Geo. H., Adv. Co., Philadelphia, Pa.; Rust, C. A., Saginaw, Mich.

(S) Sellman, W. A. B., Baltimore, Md.; Senn, N., Chicago, Ill.; Scott, X. C., Cleveland, Ohio; Souchon, Edward, New Orleans, La.; Sherman, H. A., Peachton, Ohio; Smart, Chas., Washington, D. C.; Schweigler, A. J., Milwaukee, Wis.; Street, David, Baltimore, Md.; Shoemaker John V., Philadelphia, Pa.

(T) The Maltine Mfg. Co., New York City, 2; Thomas, Oscar T., Cleveland, Ohio; The Mercer Chemical Co., Omaha, Neb.; The New York Policlinic, New York City; Talbot, E. S., Chicago, Ill.; Thomas, A. L., Chicago, Ill.

(V) Vetter, J. C. & Co., New York City; Van Riper, C. S., Paterson, N. J.

(W) Walker, R. S., Beacon, Mich.; Wall, G. A., Topeka, Kan.; Widman, J. F., McGregor, Iowa; Warner, W. R. & Co., Philadelphia, Pa.; Wilson, A. C., Youngstown, Ohio; Wegge, F. W., Winnebago, Wis.; Wood, Anna, Terre Haute, Ind.; Woodbury, Frank, Philadelphia, Pa.; Wood, E. A., Pittsburg, Pa.; Washburn, W. H., Milwaukee, Wis.